DOCTOR OF PHILOSOPHY

Evaluating the incredible years baby programme in Wales

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Award date:
2013

Awarding institution:
Bangor University

Bangor University

Prifysgol Bangor

Evaluating the Incredible Years Baby Programme in Wales

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A thesis submitted to the School of Psychology, Bangor University, in partial fulfilment of the requirements of the degree of Doctor of Philosophy.

OCTOBER 11th, 2013

This PhD was funded by the ERDF KESS (PhD) studentship awarded to Catrin Hedd Jones (BU Maxi 017) in partnership with the Children's Early Intervention Trust.

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Acknowledgements

I have been very fortunate to have Professor Judy Hutchings and Dr Mihela Erjavec as my supervisors, their experience, knowledge and patience were a great combination. The advice and support provided by Dr Simon Viktor during the analyses of the data has also been invaluable and I will always appreciate the support given at times when I needed it most.

This work would not have been possible without the generous support of the European Social Funded Knowledge Economy Skills Scholarship in partnership with the Children's Early Intervention Trust.

I have also benefited from generous advice from Dr's Tracey Bywater, Carl Hughes and Helen Henningham and Professor Dave Daley at various stages of the project. The team at the Centre for Evidence Based Early Intervention have also been very supportive. I would like to pay particular thanks to Dilys and Kath for their unfailing welcome and support, Elin Williams who learnt the PIPOc and coded all the parents with such fidelity, Margiad, Nic and Kirstie who have all been so patient with my random requests for help and all the 'lottery ladies' for their support.

The research would have been possible without the parents who welcomed me into their homes to gather the data it has been a privilege to meet them all and witness their amazing babies develop in the first year. I have also had the pleasure to work alongside the group leaders, their enthusiasm and dedication in promoting the delivering the programme is a testament to their professionalism.

Finally my fantastic family have supported me throughout: 'Diolch o galon' to my parents for instilling in me a belief that anything is possible with hard work, Gwyneth and Glyn for accepting me unconditionally and always being there to offer support, but above all to my husband Guto and sons, Ifan Prys, Gwern Aled and Aron Brenig. This would never have been a possible without your faith and encouraging comments that 'one day Mam will be a Dr'. So with gratitude to have Guto as my amazing husband and immense pride in my incredible sons I dedicate my thesis to my family.

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Reflective Commentary

The journey from a parent of three boys under three years of age in 2004 to submitting my PhD thesis has been eventful and totally unexpected to say the least. I had taken time out from employment to enjoy the preschool years with my boys and I embarked on a developmental psychology module through the Open University and got hooked. Three other diploma modules followed whilst I started a child minding business. During this period I came across the first Incredible Years programme offered in our local village and I truly looked forward to the weekly meeting to share experiences and learn new approaches. I remember thinking that joining a group like this in the early stages of being a parent would have been great. Less than two years later and I had reached the final diploma exam and a conversation with Judy changed my life beyond my dreams.

The opportunity to research parenting in Bangor whilst working towards a Ph.D. seemed too good to be true and there have been many new experiences along the way venturing to the amazing Infant Mental Health conference in Cape Town being a particular highlight. The Incredible Years Wales Centre (as it was at the time) became a welcoming base where I could enjoy the company of adults who were actually interested in the same topics and endlessly patient when I got lost in a fog of confusion. The first months were spent reading as I planned the best way to recruit enough parents and babies to the study. The expertise in training and evaluating Incredible Years programmes in the Centre provided a template to build upon and as I gathered endless 'crucial' questions I wanted to ask parents.

With my barrage of questions selected (and tweaked) I started data collecting in September 2010. It did not feel too long ago since I was 'shell shocked' first time mum myself and I genuinely appreciated the fact that mothers were willing to allow a stranger in their home to ask questions and even film them with their baby. The development in the babies and parents when I returned to see them six and twelve months later was astounding and I was genuinely sorry to say good-by on my last visit in February 2012.

There have been a few changes in supervisory arrangements since I started the PhD as my academic supervisors Tracey and Dave both secured promotions elsewhere. Mihela who originally agreed to by my Committee Chair kindly stepped up to be my supervisor and I can never thank her enough for being an amazing supervisor. She has been a true friend providing endless support, even sourcing a statistic expert in times of crisis. Judy has also

stuck with me throughout offering excellent advice based on decades of experience, Judy's contribution to families both in Wales and internationally is truly inspiring.

The process has been exciting, rewarding and at times slow with so many well-meaning enquiries of "have you finished it yet?" If I could start again I would discipline myself to write more in the first year rather that attend various modules and then read endless articles. I would also force myself to submit at the end of the three-year funding rather than try and write the majority whilst working full time on another project in the university.

These are really inconsequential in relation to the pride that I feel in getting to this point. At times it has felt as if I would never conquer of the mountain of work and I appreciate that this would never have been possible without the support and understanding of my family who have made numerous uncomplaining sacrifices along the way. I know that these three and a half years have given me a taste of a career that I hope will continue to excite and stimulate in the future.

Summary

The early years in a child's life are a period of rapid development and the evidence base for supporting infant mental health is presented in the introduction (Chapter 1). The Westminster government has identified parenting programmes are one of the recommended ways to reduce the current educational inequalities in socially disadvantaged families and the Incredible Years (IY) series has a strong evidence base for improving outcomes for children from three to eight years of age. A new IY programmes for families in their child's first year is the focus of this research and this is the first pilot evaluation of the eight-week parenting group.

This thesis contributes to the current research in the following ways: Firstly by reviewing the effectiveness of group-based parenting programmes delivered in the first year (Chapter 2). A summary of the selected measures and the data collection process is presented (Chapter 3). Secondly the development and testing of a new observation code for evaluating positive parenting behaviours with very young children, the Parent Infant Play Observation code (PIPOc) is reported (Chapter 4). The comparison of intervention and control families' outcomes is presented as the third study (Chapter 5). The programme successfully increased the parents' sensitivity but did not have a significant impact on the other measures. The final study (Chapter 6) includes feedback from group leaders and parents that attended the programme. Parent attendance was good with positive feedback from those involved with the group. Details of the time and cost involved in delivering the programme are also presented in this final study. The cost of the programme delivery compared very favourably with the costs of other parenting support. Broad implications of the findings and lessons learned from undertaking the thesis are discussed in final chapter (Chapter 7) with suggestions for future developments.

CHAPTER 1

GENERAL INTRODUCTION

Thesis Structure

The core of this thesis comprises seven chapters that include four papers all of which deal with supporting parents and their babies in the first year. The first chapter places the research in context and explains why the Incredible Years Parents and Babies programme was developed in 2008. The first paper (Chapter 2) reviews the existing evidence for group-based parenting programmes delivered in the first postpartum year. The following two chapters describe the practicalities of conducting the research within rural towns and communities in Wales, how the evaluation measures were selected (Chapter 3) and the development of a new observation measure designed to evaluate parents' positive interactions with their baby (Paper 2, Chapter 4). The third paper (Chapter 5) describes the main outcomes from the study with parents that attended the programme and comparison parents followed up six months after the baseline visits. The final paper reports feedback obtained from the parents that attended the programme and the group leaders involved in delivering the groups (Chapter 6).

Finally, the thesis conclusion presents a discussion (Chapter 7) of the thesis findings and their implications with suggested developments for the future.

External Risks to Children's Outcomes

Numerous studies have identified risk factors that may be related to poor outcomes for the children. These include having teenage parents (Osofsky, Hann, & Peebles, 1993); mothers that are depressed (Field, Heal, Goldstein, Perry, & Bendell, 1988; Murray, Kempton, Woolgar, & Hooper, 1993); parents that are substance abusers (Zuckerman & Brown,1993); and parents living in poverty (Dickerson, & Popli, 2012; Halpen, 1993; Katz, La Placa & Hunter, 2007; Kiernan, & Mensah, 2009 & 2011; Waldfogel, & Washbrook, 2010; Washbrook, 2010). All of these risk factors have shown parents to be less responsive to their children compared to other parents not exposed to additional external stressors. Various aspects of parenting have been used to explain the differences in outcomes. Hart and Risley (1995) reported that differences in language quantity and quality that were correlated with parents socio-economic status (SES) and lack of resources such as books and toys, strongly predicted deficits in cognitive and socio-emotional outcomes in children from low SES families in the ALSPAC cohort study (Gregg, Propper, & Washbrook, 2008).

A longitudinal study in New Zealand has identified childhood poverty to be strongly associated with educational and economic disadvantage in adulthood (Gibb, Fergusson, & Horwood, 2012). Differences in children's school readiness are evident in children as young as three years of age and the gap between the outcomes for children living in poverty and children of parents that have a good education increases during adolescence (Blanden, Gregg, & Machlin, 2005).

A recent cohort study of children in the UK found that children who experienced poverty were four times more likely to exhibit delayed cognitive development and behaviour problems at three years of age when compared to children that had not experienced poverty (Kiernan & Mensah, 2009). Children were assessed from birth to five years of age in the Millennium Cohort Survey (n= 12,644) reported an 11.1 month gap between low and middle income children's vocabulary test scores at five years of age (Waldfogel & Washbrook, 2010). Multivariate analysis of the factors showed parenting and home environment to be the most important factors affecting the children's scores.

Parents living in poverty experience more negative moods, demonstrate more punitive parenting and have greater mood swings (Halpern, 1967, p 78). The stress of living on a low income may lead to parents being preoccupied by their own lack of well being, failing to recognise and validate their child's achievements. Children from the families living in poverty have also been assessed as avoiding or not persevering in difficult tasks and exposure to long-term poverty has been linked to cognitive and socio-emotional deficits as children may internalise the chronic stresses associated with poverty (Conger, McCarty, Yang, Lahey, & Kropp, 1984; Halpern, 1993, p 78; Korenman, Miller, & Sjaastad, 1994).

Irrespective of the additional challenges faced by families living in poverty a significant proportion of the children will cope well in challenging circumstances. Belsky (1984, 1998; also see Belsky & Pluess, 2009) suggests that poverty is only one factor influencing parenting style. Other factors that can buffer families against poor outcomes include social support, child characteristics and the neighbourhood − the evolutionary plasticity of individuals to respond to different (both positive and negative) environments. Full discussion of these points is beyond the scope of this thesis, but research has shown that irrespective of their socio-economic status, an evidence based intervention can be beneficial

to all parents (Gardner, Hutchings, Bywater, & Whitaker, 2010; Patterson and Forgatch, 1995).

Conduct Problems in Children

Conduct disorder is the most common childhood psychiatric disorder with prevalence at 6.9% for boys and 2.8% for girls between 5 to 10 years of age (NICE, 2007). If untreated, early onset/childhood conduct problems can lead to a long term problems. Sixty per cent of children that show symptoms at three years of age display conduct problems at eight years of age, and 50% of childhood cases of conduct disorder lead to antisocial behaviour in adulthood (Fergusson, Horwood, & Riddor, 2005). This can have a significant impact on individuals, families and society with the estimated £22.5 billion annual cost in England due to crime related conduct disorder (Bonin, Stevens, Beechham, Byford, & Parsonage, 2011). Poor parenting has been associated with early onset conduct problems (Shaw, Owens, Giovannelli, & Winslow, 2001).

Parents who are unresponsive have been shown to increase the development childhood conduct problems (Wakschlag, & Hans, 1999); this is especially evident in increased externalising behaviour problems in boys at school age (Shaw et al., 2001). Patterson (1982) proposed that poor parenting skills encourage children to be non-compliant and make unreasonable demands. When this is combined with the parents' failure to recognise and reward positive child behaviours a coercive parent-child relationship develops.

Recent advances in the study of early brain development and the impact of early stress on children's development (Shonkoff, & Phillips, 2000) have resulted in increased emphasis on providing the best possible start in the early years especially in areas of disadvantage where children may be exposed to increased risk factors for poor outcomes (Allen, 2011; Boivin, Hertzman, 2012). Repeated exposure to threatening situation or stress can disrupt the development of the prefrontal cortex, an area associated with executive functions such as inhibition control, working memory and attention (Shonkoff, 2011). Studies measuring the levels of salivary cortisol in children at nine months and three years of age suggested that positive parenting interactions decreased the cortisol levels in the children (Blair et al., 2011).

Importance of Positive Parenting Practices

The additional strain of living in difficult circumstances can distract parents from responding to their babies' early attempts at interactions and may restrict the availability of material and emotional resources. However, it need not define the outcomes for the next generation currently born into poverty. Patterson and Forgatch (1995) have demonstrated the importance of focusing on specific parenting behaviours by demonstrating that the effects of poverty and other disadvantaging circumstances tend to be mediated through parents and the extent to which parenting behaviour is compromised.

Studies with rats have shown the importance of early attentive parenting on moderating the fear response levels of offspring. Rat pups that experience the most maternal licking and stroking showed the least fear and stress levels compared to rat pups reared under different maternal care levels (for a summary of recent studies into Gene x Environment interactions in both rodent and human research see Meaney, 2010).

A longitudinal study comparing the benefits of nutritional supplementation with psychosocial stimulation in Jamaica found that stunted children that received stimulation in the early years (aged 9 to 24 months) had less self-reported violence, fewer incidents of depression and social inhibition and improved IQ and educational achievement at 22 years of age − whereas nutritional supplementation had no long term effect (Walker, Chang, Vera-Hernández, & Grantham-McGregor, 2011).

Parents are the main source of influence in the first years of life. The quality of interactions between parents and infants in their first months of life affects the development of secure attachments and future relationships (Ainsworth, 1985; Bowbly, 1969, 1997; Guajardo, Snyder, & Petersen, 2009; Meins, Fernyhough, Russell, & Clark-Carter, 1998; Rutter, Giller, & Hagell, 1998). A reliable continuity of response by a significant carer establishes a pattern of expectation that the baby develops as an 'internal working model' (Bowlby, 1997) of how future relationships may be experienced. Children that have developed a secure attachment are more likely to be rated by teachers as independent explorers, demonstrating a strong sense of selfhood. These children are also more persistent in solving problems and resourceful, adopting a flexible approach in peer interactions at pre-school (Miens, 1997; Sroufre, Fox, & Pankake, 1983; Turner, 1991) and achieving better academic outcomes (Pearson et al., 2011).

Mothers who were observed to comment more on their six-month old infant's internal mental states tended to have infants that were classified as securely attached at 12 months. The increased parental awareness of their child's internal mental state encouraged their child's social and emotional development (Meins et al., 1998, Meins, Fernyhough, Fradley, & Tuckey, 2001) and supported their child's theory of mind development in their preschool years (Symons, Clark, & Sharon, 2000). Parents that respond sensitively to their baby are acknowledging their baby's ability to have an impact within their immediate environment and this in turn encourages their infant's sense of security (De Wolff, & Van IJzendoorn, 1997) and inner autonomy. Experiments developed by Tronick and Cohn (1989) demonstrated that mothers presenting a 'still' expressionless face with their two-month old infants initially provoked attempts by the babies to attract their mother's attention; however, infants of depressed mothers did not protest at the lack of interaction as they were accustomed to low levels of visual interaction (Tronick & Gianino, 1986). A recent study by Lorber and Egeland (2009) reported that poor quality of parenting in infancy was a significant risk factor for externalizing problems through childhood and adulthood.

Mothers who may be at increased risk of poor parenting skills were more responsive to their infant's communication after receiving home visiting and group support in the first year (Heinicke, Fineman, Ruth, Recchia, Guthrie, & Rodning, 1999). When compared to the children of mothers that did not receive the support they were assessed as more securely attached, more task orientated and autonomous. Conversely, lower levels of adult speech and activity with one-year old babies during interactions significantly predicted the diagnosis of child psychiatric disorder at seven years of age (Marwick et al., 2013).

Encouraging Positive Parenting to Support children in Challenging Circumstances

Offering early support to parents is now viewed as a cost effective method of ensuring all children, irrespective of their environment, get the best possible start in life (Allen, 2011). A supportive and secure relationship with a parent increases the child's resilience to future stress and reduces the risk of poor social and cognitive skills later in life. A recent cost benefit analysis estimated that by identifying a five year old child with conduct disorder and offering support through evidence based parenting programme yielded savings of £16,400

per family over the next 25 years compared to the cost incurred if no treatment were provided (Bonin et al., 2011).

The Welsh Government (WG) has set targets to reduce child poverty through the implementation of the Parenting Action Plan (Department of Training and Education, 2005; Children and Young Peoples Committee, 2009) and the recent Child Poverty Strategy for Wales (Children and Young People, 2011; Social Justice Department, 2012). The Sure Start, Flying Start and Families First initiatives were developed to provide additional early years support for families living in areas of disadvantage. Families in Flying Start areas are offered part time government funded pre-school childcare and additional support from health visitors with smaller caseloads. Parents and their children are invited to join language and play-groups and evidence based parenting programmes are available to encourage parenting skills and positive relationships between the parents and their child.

The Incredible Years Parenting Programmes in Wales

The Welsh Government (Children and Families measure. 2010) supported the provision of the Incredible Years parenting programmes and training for group leaders to deliver them to a high standard and with fidelity to the manual. This support has enabled a range of Incredible Years (IY) programmes to be delivered and evaluated in real world settings. The evaluation of the IY parenting programme within Sure Start areas with parents of three and four year old children demonstrated significant improvements in child behaviour, parental mental health, positive parenting and a range of other measures (Hutchings, et al., 2007) with benefits maintained at the 18 month follow up (Bywater et al., 2009). Following the evidence of successful outcomes for the IY parenting programmes for older children the IY Baby and Toddler parenting programmes (Webster-Stratton, 2008) were introduced to support families in the early pre-school years. The twelve-week Toddler parenting programme was developed for parents of one to three year old children and evaluated as part of the Welsh Government funded evaluation within deprived areas in Wales as part of the Flying start programme. The RCT study found modest short-term improvements in the mental well-being of intervention parents and reduced negative parenting and child deviance (Griffith, 2011).

The work reported in this thesis is the first known evaluation of the eight-week IY Parents and Babies programme (IYPB; Webster-Stratton, 2008). There is strong evidence of the benefits of offering early support for families at risk of poor outcomes especially following the pioneering work of Olds in America with 30 year follow-up (Olds, Hill, Mihalic & O'Brien, 2001). First time mothers received home visits during pregnancy and for the first two years of their child's life and long term evaluations showed significant benefits for both the mothers and their children after receiving this intervention (Eckenrode, et al., 2010; Kitzman et al., 1997: Olds et al.,1997, 1998, 2007 & 2010). However, offering individual support is resource intense and providing support to groups of parents and their babies may be a more effective method for supporting the child's crucial first developments. Group leaders are able to offer support to a number of families at the same time with the additional potential benefit of group support, which may help mothers that are trying to adapt to their new circumstance as a parent.

Although recent reviews show that parenting support provided when the children are of school age can have a positive impact, parenting support at an earlier stage; *primary preventative parenting support* has less evidence. The following chapter summarises the current research evidence for group-based parenting support offered in the first year.

CHAPTER 2

STUDY 1

A SYSTEMATIC REVIEW OF THE EFFECTIVENESS OF POSTNATAL SUPPORT GROUPS FOR PARENTS

[1]

[1] This chapter presents the first Thesis paper currently under review for publication
Jones, C.H., Erjavec, M., Hutchings, J., Hughes, J.C., & Viktor, S. (2013). A Systematic Review of the Effectiveness of Postnatal Support Groups for Parents.

Abstract

Background: The evidence points to the beneficial effects of early parental interventions on maternal and child developmental outcomes, but the effectiveness of group-based interventions delivered in the first year of life has not as yet been systematically reviewed.
Method: A systematic literature search was conducted to identify original reports of evaluations of early group-based interventions for parents that recruited parents after their infants' birth but before the end of their first year of life. Twelve published papers provided quantitative data in their evaluations of interventions and also employed baseline to post-intervention comparisons and/or control group comparisons of maternal and (in some cases) child development variables. These studies are reported and their methods and outcomes are critically reviewed.
Results: Group-based early parental interventions resulted in some to improvement in parenting skills, increased positive affect and promote interaction quality, all of which may result in positive child outcomes. A range of methodological flaws in the studies means that the conclusions are speculative and calls for more thorough evaluation of the interventions.
Conclusions: Long term evaluations, using validated measures, of these interventions are needed to inform the choices made by policy-makers, service providers and parents.
Key words: infant; parent; early intervention; group intervention

Introduction

Children's experiences in early infancy can have a profound effect on their later development (Chrisholm, 1995; Gerhardt, 2004). The infant brain doubles in size in the first year as neural pathways are formed and unnecessary connections are pruned. Recent scientific advances in our understanding of the developing brain emphasise the importance of appropriate stimulation during this sensitive period of development. Focused interventions delivered during the first years enable the effective development of executive function, emotional and behavioural adaptation in children (Shonkoff, 2011). Research with orphans deprived of stimulation has shown that those adopted after four months of age maintained higher cortisol levels when compared to infants that were adopted during the first four months (Gunnar, Morison, Chisholm, & Schuder, 2001). Infants who had difficulty

regulating their emotional responses at nine months were more likely to show symptoms of conduct disorder when followed up at five and eight years of age (Morrell & Murray, 2003).

A great deal of research has evaluated interventions for parents of both preschool and school aged children aimed at preventing and/or reducing problem behaviours. The results demonstrate that support for parents of young children can encourage positive early experiences that improve children's social, emotional and cognitive development (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2003; Barlow, Smailagic, Ferriter, Bennett, & Jones, 2010; Bryanton & Beck, 2011; Van IJzendoorn, Juffer, & Duyvesteyn, 1995). Increasing political interest in programmes that aim to prevent rather than cure social problems has resulted in initiatives targeting additional support for families with young children living in identified areas of socio-economic deprivation (Allen, 2011). For example, The Nurse Family Partnership Home Visiting Model, developed and researched extensively in America by Olds and colleagues (Olds et al., 1998; Olds, Sadler, & Kitzman; 2007) has been introduced as the Family Nurse Partnership to targeted areas in England. First time mothers receive weekly home visits from the antenatal period until their infants are two years old; this support is currently subject to a large-scale randomised control trial in 60 sites .

Longitudinal evaluations of individual family interventions have reported long term benefits that include substantial reductions in welfare and criminal justice expenditures and higher tax revenues in addition to improved physical and mental health (Olds et al., 1998). Cost analyses comparing home visiting and parenting support groups indicate that individual support may be three to six times more expensive to deliver (Cunningham, Bremner, & Boyle, 1995; McNiel & Holland, 1972). Delivering parenting support through groups may be an alternative method of supporting parents during their children's early years with the benefit of lower staff costs. Providing parenting support to families within a group format may also increase the number of families that are able to access the support.

The birth of a baby can be seen by parents as a catalyst for change and a powerful motive to provide firm foundations for a positive future. However, it remains unclear whether very early group interventions, delivered to parents of children in their first year of life, are effective. The number of high-quality research studies on the group parenting programmes with this age range is limited. For example, Van IJzendoorn et al. (1995) identified 16 attachment based intervention studies that reported maternal sensitivity and/or

infant security results, but all of the studies involved individual interventions. The intervention strategies reported were diverse and the most effective results were obtained from behaviourally focused interventions delivered over a short time period. Van IJzendoorn and colleagues reported that interventions produced the largest effect size on maternal sensitivity (*d*= 0.58) (Cohen's *d*; see Cohen, 1988) with much less effect on infant attachment security (*d*=0.17). Bakermans-Kranenburg et al. (2003) expanded on the review by Van IJzendoorn et al. (1995), publishing a meta analysis of sensitivity and attachment results from 70 studies targeted at intervening in early childhood. Their criteria included interventions that started before the child was 54 months of age. Their meta analysis suggested that nonrandomised studies were at greater risk of reporting inflated effect sizes compared to the of randomised controlled trials (RCTs) (also see Barlow, Coren, & Stewart-Brown, 2009; Barlow, McMillan, Kirkpatrick, Ghate, Barnes, & Smith, 2010). A further analysis by Bakermans-Kranenburg and colleagues of RCT evaluations (*n*=51, including 6282 mothers) reported that interventions were significantly and moderately effective in enhancing maternal sensitivity (*d*=0.33) and infant attachment security (*d*=0.22). They concluded that the most effective interventions in terms of increasing maternal sensitivity started when the infants were at least six months of age, targeted clinically referred parents, had low attrition rates, were delivered within 16 or fewer sessions and used video feedback. Their meta analysis reported that the intervention was more effective with clinically referred samples and there were no significant differences between the results obtained based on risk factors such as teen parents, premature infants or low socio economic status.

A recent Cochrane systematic review by Barlow, Smailagic, Ferriter, Bennet and Jones (2010) on group-based parent training programmes for improving emotional and behavioural adjustment in children from birth to three years of age included eight studies. All of the studies included data from interventions with children whose mean ages were two years or older (with maximum mean age of three years and eleven months). The meta analysis showed that the group-based programmes significantly improved children's behaviour as assessed through parent report and independent observation. However, there was insufficient evidence to draw conclusions related to the role of such programmes in primary prevention of later problems.

The present review adds to the existing literature by focusing on the evaluation of group-based parent interventions delivered within the first year of life. The increased support provided by government to programmes designed to improve early parenting (Allen, 2011) calls for better evidence as to the effectiveness of potential programmes that could be delivered to parents within the community. This review evaluates the effectiveness of postnatal group interventions on outcomes for parents and their infants.

Method

Search Method

An electronic search was conducted between 29/03/2011 and 08/05/2011 and updated in January 2013 to include 2011 and 2012 publications.

Random allocation of parents to comparison and control conditions (when much needed support may be withheld from families) is an issue of debate and it is very difficult to ensure that researchers are blind to the allocated condition in intervention studies. Although we were mindful of the limitations that unrandomised evaluations may impose on the potential results, we were aware that there were only a small number of suitable papers for this age range; consequently, non-RCT and grey material/reports that met the inclusion criteria were considered. The findings of Bakermans-Kranenburg et al. (2003) on the differences in effect size from randomised and quasi-experimental studies are considered in the analysis.

Searches were conducted using a combination of search terms listed in Figure 2.1, which also provides a flow chart of the search process. A list of the databases used is presented in Table 2.1. Reviews, meta-analyses and references from identified materials were searched for original research and relevant papers but not included in the final selection of papers.

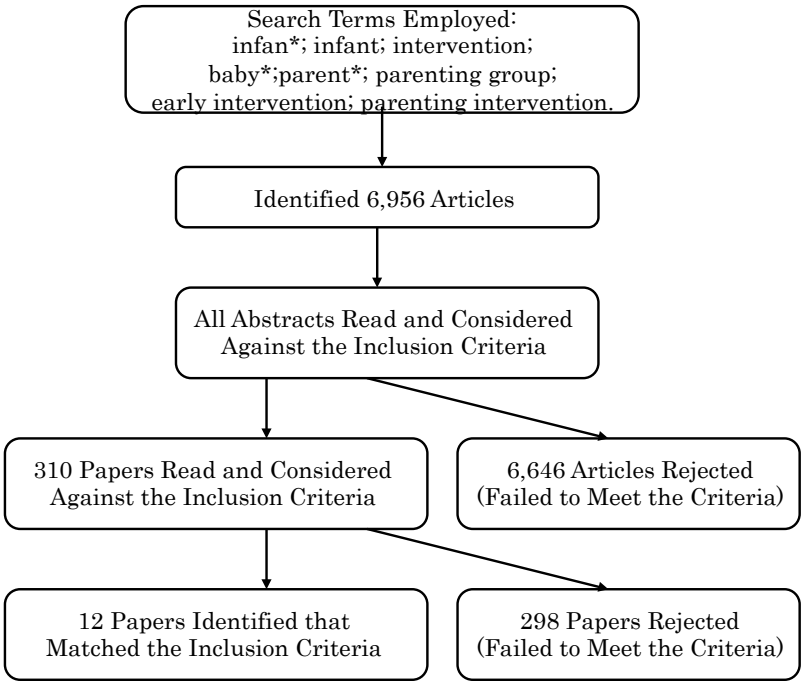

Figure 2.1.

Flowchart of the review selection process.

Table 2.1.

Initial search results of the systematic literature review and databases used.

Database	Results	Database	Results
Web of Knowledge	3,266	PubMed Central	1072
Science Direct	182	CSA	209
JSTOR	10	Cochrane Library	1,103
Zetoc	1054	Commissioning Toolkit	50

Search Criteria

In researching potential programmes for this review, strict inclusion and exclusion criteria were employed.

Inclusion Criteria.

- The interventions had to start in the postnatal period and before the infant group mean age of 12 months.
- Group programmes required parents to attend the group with their babies to enable parents to practice parenting skills within the group.
- The studies had to report pre- and post-intervention measures and/or employ an appropriate comparison group.
- Quantitative data had to be reported.
- Studies that reported evaluations were only included once, eliminating duplication (reporting the same data more than once).

Exclusion Criteria

- Interventions that started during the antenatal period, or after the infants' first birthday.
- Exclusively qualitative case studies were excluded to enable comparison of outcomes.
- Targeted interventions based on infant prematurity or developmental delay.
- Reviews.

Included Papers

Most of the 'short-listed' papers were not selected for the final review as they failed to meet all of the inclusion criteria. Twelve studies evaluating 11 different programmes for parents and infants met the inclusion criteria. A data extraction sheet and summary matrix were developed and used by the first author to ensure a fair comparison of the programmes and their effectiveness. The 12 studies included a collective total of n=750 intervention dyads and n=436 control dyads at baseline. Post intervention data was collected from n=699 intervention dyads and n=311 control dyads.

Results

We organised the results by listing each programme (see Table 2.2), summarising the key features, and finally examining the outcomes.

Programmes

The twelve studies were based on encouraging parent's to build a strong relationship with their baby with six programmes utilising psychotherapeutic methods. Two programmes focused on the community setting: The Peers Early Education Partnership (PEEP, Evangelou, Brooks, Smith, & Jennings, 2005) was developed to address educational disadvantage within certain communities, parents were encouraged to share experiences and resources and comparisons were made with demographically matched families. The Families and Schools Together (FAST) babies (McDonald, Conrad, Fairtlough, Fletcher, Green, Moore, & Leeps 2009) programme for teenage parents encouraged parent efficacy and inclusion through shared activities and discussions with groups that involved the parents and grandparents, this intervention was evaluated in seventeen communities.

The Right From The Start (RFTS; Niccols, 2008) universal intervention encouraged the development of caregiver's skills and responsiveness in a group setting compared to families receiving treatment as usual through home visiting support. Health visitors were responsible for providing the seven First Time Parents groups (Cox & Docherty, 2008), aimed at enhancing parents' knowledge and skills and fostering social support through attending the group meetings. The Infant Massage therapy evaluation (Onozawa, Glover, Adams, Modi, & Channi Kumar, 2001) targeted mothers screened as depressed after giving birth, mothers were randomly selected to be offered an opportunity to attend infant massage with their baby followed by a weekly support group and were compared with mothers that only attended the support group.

The remaining six papers reported the results of interventions based on psychotherapeutic principles exploring the parent's personal experiences and how it can impact on the present circumstances. The evaluation of the Parent and Infant Relationship Support group (PAIRS, Smith, Cumming, & Xeros-Constantindes, 2010) reported full data sets of the parents and infant outcomes collected from various regions over the ten years of

delivery for high-risk parents, the groups use a combination of encouraging joint activities between mothers and their babies and managing separation anxiety whilst mothers focused on their own emotions.

The New Beginnings Psychoanalytical group therapy (Baradon, Fonagy, Bland, Lénárd, & Sleed, 2008) was developed for mothers living temporarily with their babies within prison units. Mothers were encouraged to reflect on how they could challenge some of their preconceptions related to interacting with their baby, discussing their aspirations and preparing for the inevitable separation whilst they completed their prison sentence. The Parent-Infant Psychotherapeutic (PIP; Sleed, James, Baradon, Newbery, & Fonagy, 2011) drop-in clinic encouraged mothers to focus on their baby's emotional experience and how it impacts on present symptoms and behaviour. The group was provided in a hostel for homeless mothers with comparison data collected from dyads living in hostels that did not have the clinic.

The Parents and Children Experiencing Success (PACES; Deutscher, Fewell, & Gross, 2006) programme was developed to encourage teen mothers positive relationships with their baby, dyads followed set activities and reviewed individual videos within the group delivered in the school, and comparison teenage mothers were encouraged to spend lunch breaks with their baby. The Partners in Parenting Education intervention (PIPE; Mayers, Hager-Bundy, & Buckner, 2008) programme also encouraged teenage mothers in school to reflect on their baby's emotions and group leaders used strength based video analysis.

The Mother-Infant Therapy group (M-ITG; Clark, Tluczek, & Brown, 2008) was offered to clinically depressed mothers. The mothers group worked on recognising strategies to tackle depression, increase social engagement and encouraging interaction with babies, therapists worked with each dyad during shared activities. The Mellow Babies group (Puckering, McIntosh, Hickey, & Longford, 2010) also targeted depressed mothers. The day was shared between morning therapy for the mothers group before a shared lunch and activity session with the babies following which mothers discussed strength based videos in the afternoon, partners were also invited to join on three evening sessions.

Table 2.2
Summary of the programmes main characteristics of the studies included in the Review

Country, Study and Programme Evaluated	Group	Design	Intensity (*hr.*=hours)	Age of child (*m*= month)	Pre Treat: Control (*n*)	Post Treat: Control (*n*)	Follow Up Period (*m*= months)	Comments
England (Evangelou et al.,2005) **PEEP**	Universal	Quasi experimental	No data	Birth-5yr	174:219	174:115	Baseline and annual follow up-5th birthday	26% drop out at T2 No data on attendance in groups. Range of measures used.
Australia (Smith et al., 2010) **PAIRS**	High risk families	'Randomly selected control group'	10x2hr	1-36m av.9.5	74:32	74:32	Pre-post measures 6-28 months after baseline av.12m	Only reported results of full data sets. Follow up sub sample of intervention and no controls.
Canada (Niccols, 2008) **RFTS**	Universal	RCT	8x2hr	1-24m av.8.4	48:28	20:25	Pre-post & 6m follow up	42% non-attending and 4% dropout at T2.
USA (Deutscher et al., 2006) **PACES**	Teenage mothers	Contrast group from other school	24x1hr biweekly for 3m	8m	57:60	48:46	Pre-post/ 3-8m	23% left school/programme. Unstandardised measures. Developmental scores rejected (<3m).
Scotland (Puckering et al., 2010) **Mellow Babies**	Depressed mothers EPDS<12 at16 wks.	RCT	14x5hr weekly & 3xpartner	4m	11:6	10:4	Pre-post/4m	11 completed group. 9% drop out. Inconsistencies in reported results.
England (Onozawa et al., 2001) **Infant massage**	Mothers with EPDS score≤13	RCT	5x1hr massage & 5x30m in groups	2m median	19:15	12:13	Measures at first and last group	37% dropout from massage. All parents invited to group, additional massage tuition to intervention.
England (Baradon et al., 2008) **New beginnings**	Prison mothers	Repeated measures	8x2hr in 4 weeks	1-3m av.1.5	27	15	Pre-post only	No comparison. Lack T2 data on 44% (pre-post).

Country, Study and Programme Evaluated	Group	Design	Intensity (*hr.*=hours)	Age of child (*m*= month)	Pre Treat: Control (*n*)	Post Treat: Control (*n*)	Follow Up Period (*m*= months)	Comments
England (Sleed et al.,2011) **Parent-Infant psychotherapeutic PIP clinic**	Homeless mothers living in a Hostel	Repeated measures	Weekly drop in mean= 10 (range 2-21 in 3m)	PIP 7.5m, comparison 9m	30:29	30:29	Pre-post only	Smaller sample agreed to be filmed for obs coding 12:14.
Canada (McDonald et al.,2009) **FAST**	Multi family group & teenage mothers	Repeated measures	8x2.5hr	<24m	115 mothers and 49-69 Grand-mothers	115 & 49-69	Pre-post only	No comparison families but did collect from grandmothers. Failed to report numbers in some measures. 10% drop out.
Scotland (Cox & Docherty, 2008) **First time parent**	First time mothers	Repeated measures	5xin 6m	4m	56	38	Pre-post only	32% drop out, no comparison.
USA (Mayers et al. 2008) **PIPE**	Teenage mothers	Comparison between schools	5xdyadic sessions & some 1-1 therapy	6-18m	52:33	52:33	Start & end of school year	Lack data on drop out. Lack intensity data.
USA (Clark et al.,2008) **M-ITG**	Depressed mothers	Sequentially assigned to group/WLCG	12x1.5hr parallel & 30m dyadic groups	1-24m 8-11 mean	18:14	28 unreported ratio	Pre-post/3m	No data on T2 numbers. Overall positive but some increase in negative affect in mothers attending the programme.

Programme Features

Intervention Length

The length of the interventions ranged from 4 to 14 weeks (M = 9.8 weeks) and total time in groups ranged from 7.5 to 70 hours (M = 24 hours). The PIPE programme was available for a longer period and delivered within the academic year. The PEEP evaluation did not report data on the length of the intervention. Total contact time was not reported in the PIPE, First Time Parents, or PIP clinic but post assessment measures were collected eight months after baseline measures (PIPE) and three months (PIP) later. The PEEP study gathered annual outcome data for five years and RFTS programmes evaluated their effects six months after post-intervention measures were collected. A sub-sample of PAIRS intervention families were followed up; however, this study had an extensive post-intervention data collection period (6-28 months range; see Smith et al., 2010). The same issue occurred for the data collected after the PACES programme (see Deutscher et al., 2006) where the authors reported that post-intervention data were collected three to eight months after the baseline measures.

Sample Sizes

Sample sizes were small in many of the studies. The PEEP evaluation had the largest sample, reporting measures from n=393 baseline and n=289 follow up dyads (Evangelou et al., 2005). Only eight studies collected data from 50 or more families at baseline (PEEP n=393, FAST Infants n=115; PAIRS n=106; PACES n=94, PIPE n=85, RFTS n=76, PIP n=59, and First Time parents n=56). The remaining four studies had much smaller samples at baseline with intervention mean of 16 dyads (range=11-27 dyads) and control mean of 12 dyads (range=6-15 dyads).

Follow Up

Many of the evaluations failed to ensure adequate follow-up of parents and infants after the group finished. Two evaluations; FAST Infants (McDonald et al., 2009) and the First Time parents programme only collected data from intervention dyads at the end of the intervention. This lack of comparison data diminishes the strength of any conclusion that the intervention has any sustained effect.

The PEEP evaluation included intervention and control families and reported long term follow-up data, but failed to record the amount of time for which PEEP parents accessed the intervention. Families qualified if they attended only one group session in the five-year programme. Inclusion of families who may have had very low exposure to the programme

may have distorted the results and masked some of the intervention effects for parents that attended more of the programme. These families may only have gained a brief exposure to the potentially beneficial experiences available through repeatedly attending the groups. Another confound is presented by the authors' choice of comparison group; the PEEP children's scores were generally lower on the developmental scales when compared to the children from non-PEEP areas. Nevertheless, PEEP children showed greater progress between certain time-points.

Dropout Rates

Dropout rates (numbers of parents who did not complete the full programme) differed between interventions. In the Prison based New Beginnings programme (Baradon et al., 2008) 44% of the mothers were lost at follow-up because either they were transferred or the quality of the interview recordings was poor. There was a 42% drop out in the RFTS programme and 37% parents dropped out of the Infant Massage tuition. Almost a third of the parents (28%) enrolled on the First Time Parents (32%) and PACES programmes did not complete the full programme. Much lower dropout rates were reported for FAST babies (11%) and The Mellow Babies (9%) programmes. These were also the longest interventions with 24 and 70 hours intervention contact respectively. Three papers did not report data on dropout rates from the groups after they had started to meet; these were the PAIRS, PIP and PIPE programmes.

Evaluation Measures

A variety of measures were used. Table 2.3 gives a detailed account of the measures used to evaluate the programmes. Effect size calculations were reported in four studies; PACES, RFTS, M-ITG and PEEP. Additional Cohen's *d* effect sizes were calculated from the printed mean and standard deviation data published in the evaluations of the Mellow Babies, PIP, New beginnings, and PIPE evaluations. Insufficient data was reported in Infant massage, FAST, First Time Parent and PAIRS evaluations to allow for calculations of effect sizes. Table 2.4 summarises the outcomes reported in the evaluations and the effect sizes.

Table 2.3

Measures collected in the studies included in the Review

Programme Evaluated	Parent measures collected	Infant measures used
PEEP (Evangelou et al., 2005)	T1-T6 Demographics T2Yr1= Parent Stress Index (PSI) Questionnaire designed to assess parents daily interactions with their infants (ORIM) T3Yr2= Assessed home environment using the Observational record of the Care-giving Environment (OCRE) T4Yr3= Edinburgh Postnatal Depressions Scale (EPDS) Pleasure in Parenting Scale (PPS) Parent-Child Joint Activity Scale (PJAS) T5Yr4= Shared activities questionnaire	(No baseline) T3Yr2=Bayley Mental Index, personal and social development MacArthur Communicative Development Inventory (MCDI) T4Yr3= British Ability Scale (BAS II) Emotional Activity and Sociability Temperament Scale (EAS) T5Yr4= British Ability Scale (BAS II) Concepts about print (CAP) British Picture Vocabulary Scale (BPVS II) Adaptive Social Behaviour Inventory (ASBI/ASBI-R) Phonological awareness of rhyme and alliteration Emergent writing skills T6Yr5= British Ability Scale (BAS II) Phonological awareness of rhyme and alliteration Concepts about print (CAP) Emergent writing skills British Picture Vocabulary Scale (BPVS II) Lower case letter identification assessment Adaptive Social Behaviour Inventory (ASBI/ASBI-R) Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (PSPCSA)
PAIRS, Smith et al.,, 2010)	T1&T2= Edinburgh Postnatal Depression Scale (EPDS) T1&T2= Interactions between the mother and child were recorded for five minutes and rated using the Dyadic Mutuality Code (DMC) T3= Sub set of intervention completed EPDS and DMC T2= Programme evaluation	T1&T2= Bayley scales of infant development (BSID-II) T3= Sub set of intervention infants completed (BSID-II)
RFTS (Niccols, 2008)	T1,T2,&T3= Maternal sensitivity was rated using the Maternal Behaviour Q-sort (MBQS) T1,T2,&T3= Measurement of the Environment -Responsivity sub-scale (HOME) T2= Parents' participation T2= Follow up service requests	T1,T2,&T3= Infant Security with infants >9m, n=28 using the Attachment Q-sort (AQS)

Programme Evaluated	Parent measures collected	Infant measures used
PACES (Deutscher et al., 2006)	T1&T2= Maternal Behaviour Rating Scale-Revised (MBRS-R) T1&T2= Language Facilitation Scales (LFRS) Peabody Picture Vocabulary Test-Third Edition (PPVT-III) T1= Scholastic Reading Inventory	T1&T2= Developmental Activities Screening Inventory-II (DAS-II)
Mellow Babies (Puckering et al., 2010)	T1&T2= Edinburgh Postnatal Depression Scale (EPDS) T1&T2= Mother-infant interactions coded according the Mellow Parenting Observation code	T1&T2= Mother-infant interactions coded according the Mellow Parenting Observation code
Infant massage (Onozawa et al.,2001)	T1&T2= Edinburgh Postnatal Depression Scale (EPDS) T1&T2= Global ratings of recorded interactions between mothers and infants coded according to Murray, Fiori-Cowley, Hooper, and Cooper	T1&T2= Global ratings of Infant interaction rated
New beginnings (Baradon et al., 2008)	T1&T2= Parent Development interview T1&T2= Reflective functioning	None
Parent-Infant psychotherapy clinic (Sleed et al.,2011)	T1&T2= Coding interactive behaviour (CIB) scale Feldman	T1&T2= Infant development was assessed using the Bayley scale (BSID-II)
FAST (McDonald et al., , 2009)	m, T1= Demographics m & gm, T1&T2= Family Environment Scale m & gm, T1&T2= Social Support form m, T1&T2= Self Efficacy Scale m, T1&T2= Social Relationships Questionnaire & Parenting Stress Index gm, T1&T2= Stress Index for Parents of Adolescents measure	None
First time parent group (Cox & Docherty, 2008)	T1&T2= General Health Questionnaire (GHQ-12) T2= Group evaluation	None
PIPE (Mayers et al., 2008)	T1&T2= Maternal Behaviour Rating Scale (MBRS) T1&T2= Parenting Stress Index (PSI) T1&T2= Centre for Epidemiological Studies-Depressions Scale (CES-D)	T1= Infant Characteristic Questionnaire (ICQ) T1&T2= Infant behaviours were rated, using a combination of items taken from work by Zoll, Lyons-Ruth and Connell with additional codes developed by the authors
M-ITG	T1&T2= Parenting Stress Index (PSI)	T1&T2= Infant development was assessed using the Bayley scale

Programme Evaluated	Parent measures collected	Infant measures used
(Clark et al.,2008)	T1&T2= Beck Depression Inventory (BDI) T1&T2= Interactions between the mother and infant was rated independently using Parent-Child Early Relational Assessment (PCERA)	(BSID-II)

Note: T1= Baseline/ pre programme measure, T2= post intervention/equivalent period for control, T3-T6 =subsequent follow up, m= mothers, gm= grandmother

Table 2.4

Outcomes of the studies included in the Review

Programme	Reported outcome *Maternal outcome*	*p* value	Cohen's d effect size
PAIRS	Improved EPDS T2	.007	NR
Mellow babies	Improved EPDS T2	.005	.81
Infant massage	Improved EPDS T2	.003	NR
M-ITG	Improved BDI score T2	.008	1.13
PIPE	CES-D T2	No difference	NR
FAST	Parent stress, T2 m	<.001	NR
PIPE	Parent distress decrease in comparison T2	.003	0.27
First Time Parents	General Maternal health Improvement T2	<.005	NR
PIPE+ Depressed	Intervention mothers improved;		
	Directiveness T2	<.001	0.41
	Affect	0.003	0.25
	Responsive	<.001	0.44
	Control mothers decreased positive T2	0.034	0.23
PIPE -Intervention	Directiveness T2	<.001	0.47
	Affect	<.001	0.29
	Responsive	<.001	0.52
PACES			
	Intervention mothers improved		
	Language facilitation rating T2	<.01	0.58
M-ITG			
	Mothers improved perception of infants reinforcement	.003	1.32

Programme	Reported outcome *Maternal outcome*	*p* value	Cohen's d effect size
PIP	No effect on maternal behaviour		
FAST	Positive relationship gm	.005	NR
Massage	Intervention mothers improved involvement and communication	001	NR
	Maternal positive affect	.050	NR
M-ITG	Sensitivity (HOME only) increased T2	.01	1.08
RFTS	Responsiveness inprovedT2		
PACES	Directiveness	<.05	.52
	Improved responsiveness T2	<.01	.53
Mellow	Improved anticipation T2	<.01	.59
	Decreased negative autonomy	.018	2.25
Massage	Improved interaction	.020	0.37
		.019	-1.20
PIPE intervention	Reduced parent child dysfunctional interaction	<.001	NR
-removed defensive PSI			
		.010	0.17
New Beginnings	Reflective functioning	.003	-0.71

Programme	Reported outcomes	*p* value	Cohen's d effect size
	Infant outcomes		
RFTS	No difference on infant Attachment T2		
	Greater mean score change in group T3	<.05	.55
PIPE- Intervention infants	interest in their mothers	.016	0.11
	response to physical contact	.043	0.08
Massage	general emotional tone	.007	0.14
	Infants more attentive	.001	NR
	Massage infants more lively	.006	NR
	Massage infants more happy	.003	NR
PIPE	Control infants increased aggressive behaviour towards mothers	.011	0.19
PACES	Intervention infants Developmental quotient T2	<.01	0.53
PIP	Mental index score	<.04	0.57
	Motor index score	<.001	0.89
M-ITG	No differences on Bayleys MID T2	n.s	0.07
PEEP	Increased improvements	NR	.35-46
	2-4yr in reading readiness		

Note: EPDS=Edinburgh Postnatal Depression Scale, CES-D=Centre of Epidemiological Studies-Depression scale, T2=post group measure, T3-T6=follow up outcomes, Cohen's *d*=.20-.50 small, .50-.80 medium, .80< large. NR= none reported / insufficient results in paper to calculate, m= mothers, gm= grandmothers, ns= not statistically significant.

Based on the information provided in the papers and, in light of the meta analysis findings by Bakermans-Kranenburg et al., (2003), the effect sizes from the evaluations could be classified into three groups. Five of the programmes (MITG, First time parents, FAST, PIP and PAIRS) each met at least two criteria that are expected to lead to higher effect sizes (clinic referred parents, less than 16 sessions, babies over 6 months old at start and low attrition rates). The next group includes RCT evaluations (RFTS, Mellow Babies and Infant Massage), which also meet the above criteria but due to the rigorous experimental design may be more conservative in effect size. Finally, four of the studies did not report sufficient information to enable comparisons of effect sizes (PACES, PEEP, New Beginnings and PIPE).

The effect size data presented in this review concurs with the conclusions of Bakermans-Kranenburg et al., (2003) that programmes with clinically referred parents attending groups with low attrition rates show higher effects (see Table 2.4 for Mellow babies and M-ITG; and the PIP clinics also resulted in good effects on infant development). The other programmes that produced medium effect sizes of 0.53 to 0.58 were the PACES and RFTS evaluations. Both of these programmes had higher attrition rates that may have affected the effect sizes obtained. In contrast to Bakermans-Kranenburg et al., (2003) assertion that 'Less is more' (shorter programmes being more effective than longer interventions), the Mellow and PIPE programmes were delivered over a long period of time and resulted in good effects, reflecting the need to provide additional support to parents that experience the greater challenges. Insufficient data to enable calculation of effect sizes within four of the papers (FAST, PAIRS, Infant Massage and First time parents) force any conclusions from these papers to be tentative at this stage

Measures of Maternal Well-Being, Depression, and Parent Stress Index Scores.

Depression Measures

Smith et al. (2010) evaluation data reported that intervention parents following the PAIRS programme had significant decreases in a measure of depression (Edinburgh Postnatal Depression Scale; EPDS), reducing the scores below the cut-off score of 10. This decrease in the intervention parents was maintained at the follow-up. However, the control families' mean EPDS scores were also below cut-off at the 10 to 12 weeks post baseline. It is impossible to know whether this would also be maintained as no control families were followed up and only 14 of the intervention families provided follow-up data 6 to 28 months

after baseline. This means that the reported improvement cannot be attributed to the intervention with any certainty.

In the Puckering et al. (2010) study the intervention parents' EPDS mean scores fell from baseline to follow up whereas the control families mean scores did not change. However, intervention mothers' EPDS scores did not fall below the clinical cut off. Reporting individual data for parents' scores would have been of interest with this small sample.

The parents attending the M-ITG therapy had decreased depressive symptoms reported using the Beck Depression Inventory (BDI); these improvements were not evident in the control parents (Clark et al., 2008).

Baseline scores for intervention parents in some studies raise questions about their inclusion in the evaluation. Intervention parents in the infant massage group evaluation had baseline median EPDS scores below the clinical cut off whereas control parents' median scores were above clinical cut off this was not accounted for in the paper. The authors report that both groups had median scores below the cut off five weeks later, but this raises the issue of whether mothers in the study were comparable. It may have been prudent if Onozawa et al. (2001) had eliminated the EPDS scores from the 5 of the 22 participants that did not have English as a first language as the clinical cut off scores is only validated for participants that have English as a first language.

Parental Stress and Well-Being Measures

There were no initial differences between intervention and control parents in the PIPE evaluation reported data on parent stress. Mayers et al. (2008) eliminated the results of parents that answered defensively on the Parent Stress Index (PSI), removing data from 29% of the intervention participants and only 3% of the control parents. They subsequently reported a significant improvement in favour of the intervention parents in relation to the Parent-child interaction dysfunction and Parental distress measures. However, removing so many parents from the intervention group calls the validity of the findings into question.

The FAST evaluation only collected data on parents that completed the programme; this may have biased the overall reported result of a decrease in total stress as parents that failed to attend, and/or comparison parents, may also have shown a decrease in stress over time. The social support scores from the grandmothers that attended the FAST evaluation were above the norms at both pre-group and post-group assessment. This suggests that these

families already had a strong social support ethos and this might explain the exceptional retention rates for those that attended the groups. As all of the measures in the FAST evaluation were self-reported from participants that remained at the end of the programme and collected by the researchers conducting home visits they may have been biased by social desirability (participants may have felt the need to reflect positive outcomes to their group leaders). The authors failed to report how many participants completed the following measures at the end of the intervention: Social sub-scale of the Self Efficacy scale, Family Environment scale, Tangible support sub-scale of the Social support scale and Social relationship with their baby subscale.

Overall parent General Health Questionnaire scores (GHQ-12) in the First Time Parenting group were low, suggesting that these parents were not experiencing distress and the group leaders may not have been engaging those that might benefit most from additional support. Of the five parents who had had pre-intervention scores within the clinical range for mental health problems, the three that completed post-group GHQs showed a decrease in their scores although they remained within the clinical range.

Parenting Skills

The reported improvement in the mothers' skills after attending the PACES programme should be viewed with caution due to the high dropout rate of 28% (intervention) to 23% (control), with data from 47 dyads not available after baseline. This study also used a rating scale that had not been standardised to evaluate maternal behaviours.

Reported improvements in all of the globally rated maternal and infant interactions in the infant massage group sample are impressive. In the context of this paper all intervention and waiting list control parents had access to a support group. Attending a group alone did not have the same positive effect on the interactions between mother and infant. However it would have been helpful to note the attendance rates in all the evaluations.

The PAIRS evaluation also used global rating of maternal interaction; pre-programme scores for intervention parents were lower than control parents 'scores. Intervention parents' post-group scores showed statistically significant improvements that were maintained with a sub-sample at follow-up. Control parents also showed a (non-significant) improvement at the second data collection but, unfortunately, were not followed up. Staff responsible for rating the children could also have been aware of the dyads condition in this study.

The blind coding of Parent-Child interactions for the M-ITG evaluation demonstrated that intervention mothers had statistically significant improvements in two of the eight factors; increased involvement and communication with their infants. Conversely, the sample of parents in the PIP study did not show any significant difference in the interactions coded independently from video recordings of play.

There may have been methodological issues in relation to the 'Mellow coding scheme' used in the Mellow Parenting evaluation. The author states that this scheme has been shown to have concurrent validity with other measures of family functioning (p. 32, Puckering et al., 2010) but no evidence is presented or referenced in this paper. From the data presented seven dimensions demonstrated a statistically significant positive change in intervention parents.

Infant Development

The PIP study conducted with parents in homeless hostels (Sleed et al., 2011) resulted in significant intervention effects between baseline and follow-up at three months. Babies attending the weekly drop in clinics showed significant improvements in the Mental and Motor scales (Bayley Scale of Infant Development- second edition [BSID-II], Bayley, 1993). The babies in the comparison hostels showed a significant decline in these measures during the same time period.

The PACES evaluation reported that intervention infants had significantly higher developmental quotient (DQ) scores at post-test and that the DQ scores of the control infants had decreased four months after baseline. However, they used a developmental screen that did not have national norms, and the authors report that the inflated scores obtained for three-month old infants had to be eliminated.

The PEEP evaluation involved multiple measures to evaluate the infants' development. The follow up assessment of the PEEP children between the ages of two and four years of age showed increased improvements in their understanding about books and phonological awareness of rhyme and alliteration. The comparison children's scores were initially higher but showed an overall decrease during these ages. Teacher reports in the comparison areas gave their children higher ratings in numeracy skills, pro-social behaviour, confidence and independence.

The M-ITG evaluation did not find any difference in infant mental development when measured at 12 weeks after baseline, this was a very brief intervention and the infants may show greater increase later on as they develop, this is called a sleeper effect.

The RFTS evaluation collected data on infant attachment on a subset of infants that were at least nine months old (*n*=28). The authors compared the scores of parents that attended fewer than four meetings, classified as non-attending, with the parents that received four or more group meetings. Maternal sensitivity and infant security change scores were significantly improved in RFTS dyads that attended 4+ sessions compared to non-attending dyads. This suggests a 'dosage effect' when parents are involved in a programme sufficiently to have an effect on their parenting sensitivity. This concurs with Webster-Stratton (2011) recommendation that parents need to attend two thirds of the programme to receive a sufficient' dose' to show any benefits.

Reflective functioning (RF) statements were the only qualitative measure reported in the New Beginnings project. They were extracted from the interviews with the mothers, and are said to show "the ability of the mother to reflect on her relationship with, and accurately to attribute thoughts and emotions, to her child" (p. 245, Barandon et al., 2008). The authors were unable to be transcribe 5 of 27 recordings due to the poor sound quality. The 15 mothers that provided pre- and post-intervention data showed a significant increase in mean overall RF scores although the final scores were still below normal levels.

Discussion

This review examined the available data related to the effectiveness of group-based parent interventions with samples including infants in the first year of life. All the studies reported some improvements in maternal and/or parenting variables following attending the programmes. Overall, the evidence is encouraging but not sufficiently robust to determine the effectiveness of attending parenting groups at this transition stage.

Numerous methodological issues in the studies were of concern. These included small sample sizes, incomplete reporting of sample sizes, unreported results and attendance rates, and the use of a wide range of measures, some of which were not standardised and lacking data on concurrent validity. Dropout rates were high in the majority of the studies and those parents that attended the groups included a large infant age range. For example, the PIPE programme infants had an age range of 32 months and the M-ITG recruited parents with an infant age range of 23 months. This may be problematic because the challenges

faced by a mother of a newborn can be very different to those faced by a mother of a toddler. Other methodological flaws include poor experimental design and recruitment of participants that did not seem to meet the target criteria in some evaluations (as seen in the depression and maternal general health scores at baseline for example).

One of the challenges in evaluating a preventive parenting programme is identifying significant change in the short to medium term. The extensive measures used within the PEEP report were age appropriate and included parental self-report on mental wellbeing, stress and confidence. Researchers in this study also recorded interactions between the parents and their infant and assessed infant development. Unfortunately flaws in the matching of families at the outset and in recording how much the PEEP families actually accessed the groups resulted in outcomes that were inconsistent and hard to interpret.

Conclusion

This review of group-based parenting interventions delivered in the first 12 months reported some significant improvements in maternal and/or child variables in all 11 programmes. The potential to develop parenting skills within this window of opportunity for enhancing child development is worthy of serious investigation. However, the review highlights substantial methodological problems with these evaluations.

Robust studies, including validated measures used with larger numbers of participants randomly allocated to intervention and control conditions are required. These evaluations should include long term follow up and with analyses that take account of missing data at follow-up are necessary to ensure that gains can be attributed to increased confidence and skills of parents and the development of positive parent-infant relationships facilitated through supportive parenting groups.

Key messages

- Primary preventative parenting programmes may prevent the establishment of dysfunctional parent-infant interaction and encourage infant development.
- Limited number of group-based interventions have been administered and evaluated in this important area of family and child support.

- All of the postnatal support groups resulted in some positive outcomes for parents, including increased affect, improved health and/or greater sensitivity during interaction with their infant.
- More rigorous evaluations are needed with families and their infants to establish the long-term effectiveness of such parenting support groups.

CHAPTER 3

STUDY METHODS

Introduction

This chapter explains the study design and data collection procedures used to evaluate the Incredible Years Parent and Babies (IYPB) programme in Wales. A full protocol is included as an appendix N and the outcomes are reported in Chapters 5 and 6.

Aim

This is the first known evaluation of the IYPB programme developed for parents of infants in their first twelve months of life (Webster-Stratton, 2008). The programme was developed for use with families deemed to be at increased risk of less than optimal outcomes. The programme is manualised and the curriculum emphasises the importance of appropriate stimulation to encourages babies' physical, social, emotional and language development. Parents are encouraged to observe their babies' development and respond to their child's cues. An RCT evaluation of the IY Parent and Toddler programme with parents of toddlers aged 12 – 36 months reported statistically significant improvements in the parents' self-reported Mental Well-being and reduced negative behaviours when parents who attended the groups were observed with their child. The toddlers were also rated as less deviant after their parent attended the programme (Griffith, 2011). The present study assessed whether offering the IYPB programme to parents of babies would have similar beneficial effects to parents.

Objective

The key objective of the present research was to undertake a trial of the Incredible Years Parent and Baby (IYPB) programme with parents of babies aged 0–6 months at the start of the programme. Parents were recruited from the communities by health visitors and group leaders, and groups were delivered as part of local services for families. The author identified age appropriate measures to enable evaluation of possible outcomes (see Appendix N for the full protocol). Parents were sequentially offered a place on the IYPB programme prior to a programme being offered in their area or placed on a waiting list control. Service providers agreed that the control parents would be offered a place on the IY Parents and Toddlers programme, for parents of children aged 12-36 months old, after the follow up measures had been collected.

Funding

The research was funded through the Knowledge Economy Skills Scholarship, European Social Fund (BU Maxi 017) and Children's Early Intervention Trust (CEIT- formerly Incredible Years Cymru Trust). A total of £63,500 was contributed towards the project costs and student stipend for the author (November 2009 to October 2012) with £17,500, supervision and additional resources provided by CEIT.

Group Delivery

Guidance on the delivery of the IYPB programme was provided by three accredited IY mentors led by Professor Hutchings with support from Bridget Roberts and Dr Sue Evans. Academic supervision for the study was provided by Drs. Erjavec, Hughes, Bywater, Daley and Hutchings at the School of Psychology, Bangor University.

Groups of parents attended with their babies and received the manualised programme (Webster–Stratton, 2008) under the guidance of two trained leaders. Parents discussed their baby's development and followed six modules developed to support their understanding of their baby's needs in the first year. The parents and their babies meet weekly for two-hour group sessions and all of the groups in this evaluation were delivered on eight consecutive weeks. Figure 3.1 illustrates the modules within the IYPB programme and further details of the module content are available in Appendix A.

The programme uses a collaborative learning style; parents share updates on their infants' development and discuss topics using the material provided in the programme. The programme includes DVD clips of parents and their babies that illustrate key parenting principles and encourage problems solving by the parents. New skills are practiced in the group with the babies and parents are set weekly tasks to encourage them to implement the ideas at home. The programme also encourages parents to share contact details with each other to provide additional support between meetings and to extend their existing social support networks.

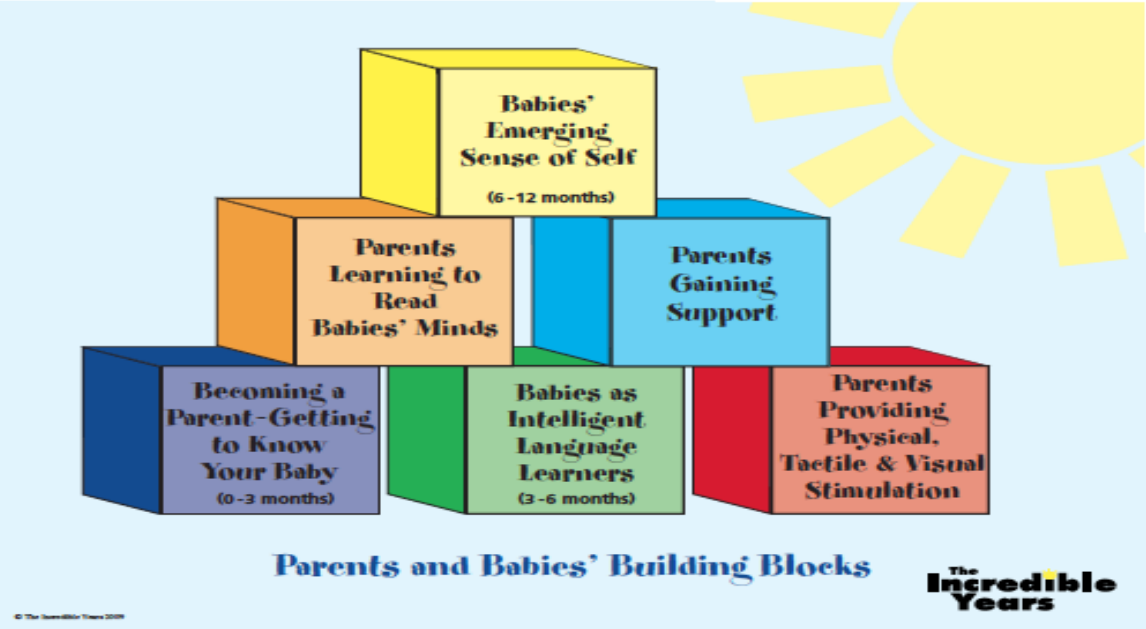

Figure 3.1 The Incredible Years Parents and Babies programme modules (Webster-Stratton, 2008)

If parents miss sessions, whenever possible leaders visit or call them to update them on the session content and encourage their continued participation in the group. Parents' participation is rewarded with token gifts and a shared meal/snack at each meeting and all the parents receive certificates of attendance.

Evaluation Setup

Based on the evidence supporting the effectiveness of the IY BASIC parenting programme in Wales (Bywater, et al., 2009; Hutchings et al., 2007), the Welsh Government (WG) purchased a copy of IY Toddler and Babies programme manual for each local authority (*n*= 22) and funded group leader training in the IYPB programme across Wales (*n*= 475).

The author contacted the service managers in North and Mid Wales and arranged county-based briefings about the research plan. The evaluation was registered online with the International Standard Randomised Controlled Trial register as a controlled non-randomised trial (See Appendix B, http://www.controlled-trials.com/ISRCTN62055412/Infant)

The research team invited interested family support service managers to a meeting at the Centre for Evidence Based Early Intervention (CEBEI; on 30/6/2010 − see Appendix C for copy of the letter of invitation). This provided an opportunity for managers to share their service delivery plans for 2010-2011 and provide information on expected birth rates in their areas. The research team explained the research design and resources that would be provided as part of the study (see Appendix D). Service managers who were interested in participating in the evaluation were invited to complete an expression of interest document agreeing that at least one of the group leaders would be supported to attend weekly supervision with IY mentors during programme delivery (see Appendix E). Following this agreement the author arranged further briefings with trained group leaders to explain the research process and the study criteria (see Appendices F and G).

Ethics and Consent Process

In accordance with Caldicott standards (1997) and the Data Protection Act (1998) interested parents that met the criteria were asked by group leaders to complete a form of consent to allow their contact details to be passed to the research team (see Appendix H). Once this consent was received the author telephoned parents to ask if they would like further information and arranged a home visit to answer any questions they may have regarding the study. Parents were recruited sequentially and prior to the home visit intervention parents were sent an information sheet (see Appendix I) and control/comparison parents were sent a similar information sheet (see Appendix J) explaining their role in the study and what they would be expected to do as part of the study. During the home visit parents were asked if they had any questions or concerns related to the study. If parents gave their consent to be part of the study they were asked to complete the study consent form (see Appendix K).

Once sufficient numbers of parents consented to be part of the study to form a group, the local group leaders were informed as to who had agreed to attend the group in their area and were then responsible for contacting the parents to inform them of the dates and location of the Baby group (Intervention parents). Group leaders were also involved in recruiting comparison parents who were offered Toddler group after the follow up data had been collected.

A video consent form was completed by parents attending the IYPB groups to enable leaders to film delivery of the group sessions for later presentation and discussion during the weekly supervision meetings (see Appendix L).

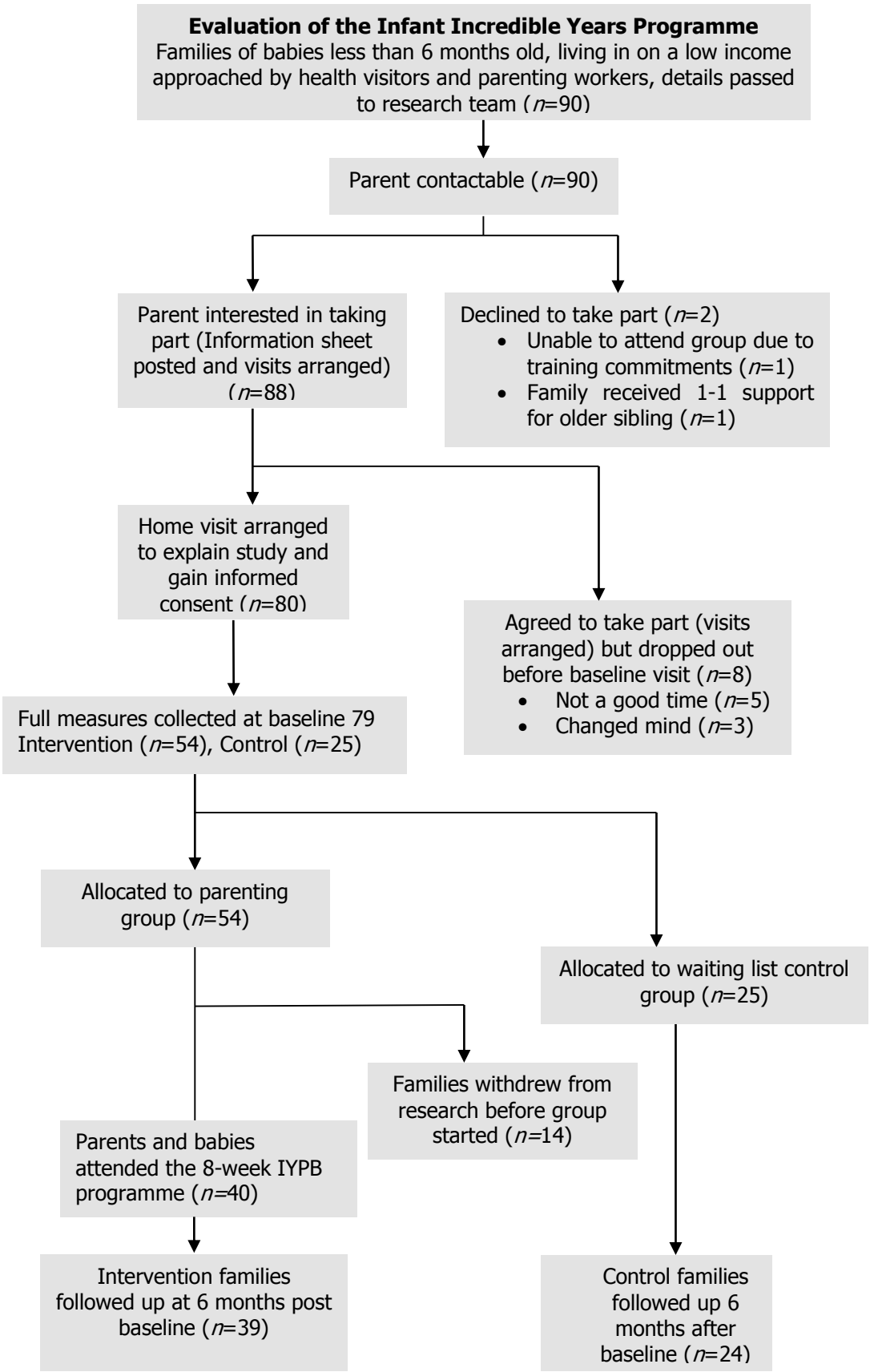

Figure 3.2 Consort diagram of the numbers of families involved in the study

Measures Used in the Study

The evaluation measures were selected following extensive research of the current literature and review of the IYPB programme content. The programme has a number of objectives (see Appendix A for a summary of the content) and a matrix of the content was constructed to ensure appropriate measures were used in this first evaluation (see Appendix M). Further details of the study are included in the Protocol (see Appendix N).

Demographic Data

Data on the parent and child's demographic circumstances, health and social information were obtained using a revised semi-structured interview based on the Personal Data and Health Questionnaire (PDHQ; Hutchings, 1996) with additional items related to the first postpartum year included in the study (see Appendix O for a copy of the questionnaire used).

Positive Parenting Behaviours

The first author researched existing observations codes used to evaluate parent interactions with young children. Many of the available measures had been used with older children and involved codes related to critical parenting. We wanted to evaluate whether the parents that attended the IYPB programme increased in the positive parenting behaviours taught in the course. Consequently, a new observation code was developed to meet the specific requirements of the study. The Parent Infant Play Observation code (PIPOc; Jones, Erjavec, Hutchings, & Viktor, submitted) has shown good reliability scores and concurrent validation with the established HOME inventory scores.

The PIPOc uses partial time sampling to code positive parent behaviours from a ten-minute video recording of mothers' play with their babies. No toys were allowed in the first five minutes and the author introduced a standard toy in the subsequent five minutes. Parents were instructed, prior to the recording, to minimise any distractions such as visitors or noise from the television (see Appendix P). The author remained as unobtrusive as possible during filming whilst ensuring that the dyad remained within camera shot. Parent behaviours were coded independently by a trained researcher (using the new PIPO code) who remained blind to allocation of participants to intervention or control conditions. Further details of the code development and validation are included Chapter 4 with a full coding manual included in Appendix Q.

Parental Self-Reported Confidence

The Karitane Parental Confidence Scale (KPCS, Črnčec, Barnett, & Matthey, 2008) was developed to assess the development of parenting skills for parents of children aged 0 to 12 months. Parents select their most appropriate answer from fifteen items rated on a Likert scale which are scored 0, 1, 2 or 3 with a total possible score range of 0 to 45 (see Appendix R). Higher scores indicate higher confidence as a parent. The scale has been validated (*N*=187 mothers) and concurrent validation was established against four established measures; Parenting Sense Of Competence, Maternal efficacy questionnaire, Parent Stress Index short form and the Edinburgh Postnatal Depression Scale. Kohloff and Barnett (2013) report the KPCS total scores from mothers (*n*=83) with babies mean age of 5.3months (SD = 3.2) enrolling on a four day residential programme to resolve parenting problems to be mean = 33.70 (SD=5.92). The scale developers report psychometric data for the scale in their manual (available from the authors, Črnčec, et al., 2008). Exploratory factor analysis suggested a three-factor structure, but the developers recommend using the KPCS total score. The scale total score reliability has been reported using Cronbach's alpha as .81, with test-retest reliability assessed four weeks after initial administration of r (26) = .88. Discriminant validity testing of the KPCS involved pre- and post-intervention assessments with parents on a five-day residential programme and demonstrated statistically significant improvements after the programme, t (27) = 6.49, p <.001. The cut off total score of 39 has 86% sensitivity and 89% specificity, 88% positive predicative value and 88% negative predictive value. Finally, the developers also suggest a reliable change index score for parents in the clinical range of six points.

Parental Self-Reported Mental Well-Being

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS; Tennant, Hillier, Fishwick, Platt, Joseph, Weich, Parkinson & Stewart-Brown, 2007) was developed to assess the mental well-being of adults in the UK. The scale includes 14 items answered by respondents using a 1 to 5 Likert scale with a total scores range of 14 to 70 (see Appendix S). The scale validation has been performed with large student and general population samples (*n*= 2,077). Confirmatory factor analysis supported a single factor structure with Cronbach's alpha scores of .89 (student) and .91(population sample). Test-retest reliability after one week between completions was also very good at 0.83(Stewart-Brown & Janmohamed, 2008 User

guide). Tennant et al. (2007) reported a population mean score to be 50.7 with a 95% confidence interval (50.3 to 51.1).

Parental Hazard Awareness

Following extensive searches for an appropriate measure of parental safety awareness the author selected a series of three illustrations published by the Royal Society of Prevention of Accidents (RoSPA: see website www.rospashop.com/p-1556-hunt-the-hazard-sheet-hall-stairs-bathroom.aspx). Parents were asked to circle all the identified hazards in one illustration. This was done at each visit and parents were shown randomly selected illustrations, which varied at each data collection visit. A scoring sheet provided by RoSPA to accompany each illustration was used to calculate the percentage of hazards correctly identified by the parent.

Home Environment

The author used selected items from the Infant–Toddler Home Observation for Measurement of the Environment inventory (IT HOME, Bradley & Caldwell, 1976; Caldwell & Bradley, 2003; see Appendix T) to evaluate the provision of resources and nurturing activities within the home. The tool is based on the ecological model of development (Bronfenbrenner & Morris, 1998). The Infant-Toddler HOME inventory (IT HOME; Caldwell & Bradley, 2003) includes 45 binary scored items which are as observed during the researchers' home visit or clarified with questions to the parent. This measure has been used extensively in research to evaluate the effectiveness of family interventions on the provision of age appropriate stimulation in the home and can be used as a screening tool.

Evaluations of the HOME have shown excellent inter-rater reliability (>90%) (Saudino & Plomin, 1997). Moderate stability for the total HOME scores (with Cronbach's alpha = .77) has been reported with infants 12 to 24 months old from low-income families (Shaw & Vondora, 1995). A review of the measure by Totskia and Sylva (2004) reported that the HOME discriminates between children at low- and high-risks of cognitive delay and substantial correlations were reported for HOME scores with other cognitive measures when the children were two years old. Mothers who scored highly on the HOME measure were also more likely to have securely attached children.

This study used revised subscales based on data presented by Linver, Martin and Brooks-Gunn (2004). Based on the findings of four large longitudinal studies, these new

subscales were identified within the original I-T HOME items. The subscales used in this evaluation included Maternal warmth (9 items) and environments that Promotion of Learning and Literacy (12 items) (see Table 4.3).

Parental Expressed Emotion

Parents expressed emotions were audio recorded to quantify the parents' attitudes and feelings towards their babies. The method of collection was based on guidance from the Preschool Five Minutes Speech Sample (PFMSS; Daley, Sonuga-Barke & Thomson, 2003). The measure involves three global scales (initial statement, relationship and warmth and two frequency counts (critical comments and positive comments) (see Appendix U). The author received reliability training from Dr Daley and parents were asked to describe their thoughts and feelings about their baby. The PFMSS has been validated using recordings from parents with preschool children (mean age of 37 months, range 34 to 39 months) with good reliability results based on 18 speech samples but with lower stability on the three months test retest results.

A modified two-minute speech sample has been reported in a study with mothers of three-month old infants (Barnes et al 2007). Following pilot recordings the author decided that five minutes was too long for most parents to be expected to describe their feelings about their baby to a stranger and this measure seemed challenging for most parents in the study, recordings were stopped 30 seconds after parents stopped talking.

Baby General Developmental Assessment.

The author administered the Griffiths Mental Development 0-2 year Scales, (GMDS; Griffiths, 1954; revised1996) to each baby in the study. This measure has been validated using a British sample (*n= 571;* Griffith, 1954) and revised with a more recent sample (*n= 665;* Huntely, 1996). Clinical use of the scales is restricted to trained psychologists and developmental paediatricians and it is a well established as a measure of children's development used for both research and clinical purposes. The author received an approved three-day training in the administration and scoring of the scale provided by the Association for Research in Infant and Child Development. The GMDS was used with each baby and the author was allowed to clarify selected items that were not observed in the available time with the parent. The scale uses a range of standardised items to test the infants' developmental profile based on five subscales: Locomotor, Personal-Social, Language, Hand and Eye

coordination and Performance. The total scores are also used to calculate the child's age equivalent and 'general quotient'.

Group Leader Support

Group leaders (*N*= 17) attended a two-day training course funded by the WG and provided by the Centre for Evidenced Based Early Intervention. The majority of the group leaders (*n*=14, 82%) were delivering the programme for the first time, although 12 leaders had delivered other IY parent programmes, 5 had not previously delivered any IY programmes prior to this study.

Group leaders attended a set up day and received the resources one week prior to their first group. A further eight weekly supervision meetings were scheduled with IY mentors to ensure the groups were delivered with fidelity to the programme. Group leaders supervision sessions were well attended (mean 78%, range 31-100%) and their feedback noted in weekly summaries. The IYPB programme was evaluated within a bilingual area of Wales and the research team translated all the parent literature into Welsh to enable parents to receive information in their preferred language.

Data Collection

Study Area

Parents were recruited from nine socially disadvantaged areas in North and Mid Wales. The groups were delivered within an area of 1,544 square miles with the mean town population 29,320 (range 1,800-154,000). The combined total of the population in these towns represent 9% of the population of Wales.

The groups were delivered in two consecutive waves: starting with two groups in the neighbouring counties of Wrexham and Powys (September- December, 2010) and seven groups were delivered in the North and Mid-West Wales (January – March, 2011). Group leaders were encouraged to consider any potential barriers for parents accessing the intervention in their planning and preparation for establishing the groups as described by Snell-Johns, Mendez and Smith (2004). Groups were run in the communities in which parents lived to minimise the travel required to access the meetings. Group leaders were responsible for arranging room hire and the locations included well-resourced family centres (5), clinic rooms (2) and community halls (2). Family centres had the benefit of age

appropriate equipment and facilities for parents and their babies on site whereas hospital clinic rooms and halls required leaders to transport the necessary equipment to the venue each week.

The group location also influenced the scope for informal gathering before/after the group for a meal/snack. An allowance of £30 per family was provided from the research fund to enable group leaders to provide refreshments for parents at the eight scheduled meetings. The refreshments offered depended on the room hire arrangements and available facilities. Group leaders spent a mean of £21.27 per family on refreshments during the eight-week programme.

Home Visits Data

Following completion of the consent procedure the author gathered health and demographic details from the mother using a semi-structured interview based on the Personal Data and Health Questionnaire (PDHQ; Hutchings, 1996, see Appendix O). This gave the dyad time to familiarise themselves with the researcher and data on the home environment was collected.

The author then recorded the mothers expressed emotion speech sample (Daley et al, 2003). This involved asking the parent to describe their thoughts and feelings about their baby (see Appendix U). Following the PSFMSS the parents were asked to complete three self- report assessments of their confidence (KPCS), mental well being (WEMWBS) and their awareness of hazards in the home (RoSPA). The Griffiths assessment was conducted after the parents completed the questionnaires. Whilst the parent played with the baby the author scored the IT HOME items (see Appendix T). Any outstanding items were asked after the video recording had been completed.

All measures were completed at each time point, but only the observed parental behaviour during play, parent completed questionnaires and components of the HOME inventory at first visit (baseline/Time 1) and six months later (Time 2) have been analysed in the present Thesis. Parent behaviour and self-reported questionnaires at Time 3 (one year follow up after baseline), and parents expressed emotion speech samples have yet to be analysed. We anticipate that findings relating to these will form the basis of additional journal articles.

At the end of each home visit parents received a thank you letter and £10 in recognition of their time and cooperation to the research (see Appendix V). At the final home

(Time 3) visit the parents were also given a certificate for their baby acknowledging their contribution to the study (see Appendix W).

Programme Delivery Data

Group leaders kept a record of each parents' attendance and levels of participation at each group session (see Appendix X). Group leaders also completed session checklists recording the activities covered in each meeting. Following each meeting the parents completed a session evaluation as a standard part of the programme monitoring procedures. Parents who attended the last group meeting also gave feedback on an end of programme questionnaire, which is included in the programme manual (see Appendix Y). The parents' comments on the open-ended questions at the end of programme questionnaire were summarised (see Appendix Z). All the parents' session feedback questionnaires were collected by the group leaders and forwarded to the author. Group leaders also reflected on the process in a focus group led by the author at the end of the last supervisory group meeting. Finally, group leaders kept records of the time and cost incurred in preparing and delivering the programme. Full cost diaries (see Appendix AA) were received from both leaders in five of the nine groups. These data were used to estimate the costs of establishing and delivering the programme within the community. Further details and feedback have described and reported in Chapter 6 (see Jones, Hutchings, Erjavec & Hughes, 2012).

Data Analysis

Initial analysis of the parent demographic data obtained at the baseline visit showed no significant difference between the intervention and control parents.

Following baseline data collection, 14 parents who were offered a place on the baby group did not attend the group. The author telephoned these parents to ascertain their reasons for not attending. Contact was established with 13 parents, they were thanked for their initial interest and released from the study. Initial comparison of the demographics shows that they did not differ from the other parents in the study (see Table 5.1 Chapter 5) and their data has not been included in the analysis.

The main outcome measure, the new Parent Infant play Observation code (PIPOc) was coded independently by a psychology graduate who was trained to the required standard before coding the observations and remained blind to the parents allocated condition (see Chapter 4).

Parents' answers on the WEMWBS, KPCS, IT HOME items and the PDHQ were entered into the SPSS 19 database. Entries on the database were checked independently to ensure accuracy of the data input before being analysed according to protocol.

As this was the first evaluation of the IYPB programme and the new observation measure and there was no existing data to enable calculation of the required sample to demonstrate statistically significant changes for the intervention. The sample size was based on what was realistic for the author to collect as part of a PhD study within the agreed schedule for the intervention.

Data analysis utilised the same procedures as those previously employed in the Welsh Sure Start Study published in the BMJ and BJP (Bywater et al., 2009; Edwards, Céilleachair. Bywater, & Hutchings, 2007; Hutchings et al., 2007). Effect sizes calculations were calculated to enable assessment of practical significance.

An initial analysis of the effects of intervention and the interaction were conducted. The difference between the intervention and waiting list control outcomes on follow-up scores was based on independent t tests, Pearson Chi squared and on the analysis of co-variance (ANOVA) with baseline values entered as covariates. Any differences between the two conditions, intervention and control (and lost participants) were established using t-tests and reported in Chapter 5.

CHAPTER 4

STUDY 2

THE PARENT INFANT PLAY OBSERVATION CODE (PIPOc): DEVELOPMENT AND TESTING OF A NEW POSITIVE PARENTING MEASURE

2

[2] This chapter presents the second Thesis paper currently under review for publication
Jones, C.H., Erjavec, M., Hutchings, J and Viktor, S. (2013). The Parent Infant Play Observation Code (PIPOc): Development and Testing of a New Positive Parenting Measure.

Abstract

The limited availability of a suitable observation tool that evaluates parental sensitivity to, and encouragement of, their infants prompted the development of a new positive parenting observation code reported in this paper. We developed and tested this measure – the Parent Infant Play Observation code (PIPOc) – in a pilot study of mothers filmed in their homes playing with their infants at two time points six months apart. This measure was designed to be developmentally appropriate for infants, brief and easy to code after training, and potentially suitable for clinical and research use. To assess validity and reliability, observed behaviours within the PIPOc were correlated and inter-rater reliability was calculated on a subsample of the videos. Independently coded partial interval data were further analysed using exploratory Factor Analysis. Results yielded three positive parenting components: physical encouragement, sensitive parenting and verbal engagement. Concurrent validity of the three composite factors with subscale scores from the Home Environment Inventory items (IT HOME, Bradley & Caldwell, 1976; Caldwell & Bradley, 2003) is reported. We conclude that the PIPOc shows promising psychometric properties and it is used as the main outcome measure in an evaluation of the new IY Parents and Babies parenting programme.

Introduction

The Role of Early Parenting

Parents are the primary source of influence on their child's development. Decades of research have shown that the quality of parental interaction with infants in their first months of life affects the development of secure attachments and future relationships (Ainsworth, 1985; Bowbly, 1969, 1997; Guajardo et al.,2009; Meins et al., 1998; Rutter et al.,1998;). Children that develop a secure attachment tend to develop better peer relationships at pre-school (Sroufre, et al., 1983; Turner, 1991) and achieve better academic outcomes (Pearson et al., 2011). More recent research has emphasised the importance of parents in supporting the development of infants' coping mechanisms with positive parenting observed during toddlerhood shown to have a significant impact on decreased externalising behaviour in childhood (Boeldt, et al. 2011). Failure to support infants' ability to cope with stress and regulate their emotions during this early phase of development can have long-term effects on their responses to stress, and to their growth and emotional development (Morrell & Murray,

2003; Schore, 2001). Infants that experience negative parenting or lack of stimulation become withdrawn and the resulting cyclical process of less rewarding interaction between infant and parent can be difficult to resolve, with increased risk of children developing conduct disorders (Lorber & Egeland, 2011). Negative controlling mothers are more likely to have children who show increased problem behaviours in pre-school (Spieker, Larson, Lewis, Keller & Gilchrist, 1999). Therefore, it is important to develop measures of maternal behaviour in the very early years that can identify children at risk of under-stimulation and also provide evaluation tools for assessment of the effectiveness of parenting programmes.

HOME Inventory (Bradley & Caldwell, 1976; Caldwell & Bradley, 2003)

There has been increased interest in the effects of the immediate environment on child development following publication of the ecological model of development (Bronfenbrenner & Morris, 1998). One measure that has been used extensively to evaluate the effect of interventions and as a screening tool is the Home Observation for Measurement of the Environment inventory (HOME, Bradley & Caldwell; 1976, Caldwell & Bradley, 2003). Researchers complete a binary scoring system during home visits using observations and questions to the parent. The Infant-Toddler version of the HOME inventory includes 45 items (IT HOME; Caldwell & Bradley, 2003).

Administration of this measure is time consuming and can take over an hour to complete in full. The results of the inventory also depend to on the accuracy of parental responses to some items. A shortened 30-item version was shown by Coons and Frankenburg (1982) to be a reliable and valid screening tool. Linver et al. (2004) modified the six IT HOME subscales in the light of the results of four large longitudinal datasets that reported IT HOME data. In the present research, we adopted two of these new scales to test the validity of the observational code that we developed (PIPOc).

Parenting Measures

Questionnaires

Parent-completed self-report questionnaires are often used as they simple and can be relatively low cost to administer; however, they are likely to be affected by participant bias related to parents' expectations and mood when completing the questionnaire (Gardner, 2000).

Observations.

Observational methods that evaluate parent-child interactions are considered to be the 'gold standard' of analysing the behaviours between parent and child (Cummings, Davies, & Campbell, 2000) and especially useful in tracking changes of targeted behaviours over time (Kazdin, Esvelot-Dawson & Loar, 1983). However, many of the existing codes are targeted at analysing parental interactions with older children and therefore include many categories related to reducing child deviance that are not appropriate for the assessment of early parent-child interactions (*N*=29 for DPICS, see Robinson & Eyberg, 1981; or *N*=65 for P-CERA; see Clark, 1985).Other established codes involve expensive training of new coders to a reliable standard (e.g., CARE Index, Crittenden, 1979) and do not provide a suitable tool for evaluating maternal play behaviour with infants in their first 12 months.

Some laboratory based observation methods require the faces of both parents and infants to be in camera shot; for example, to record the infant's response to the mother maintaining a still (expressionless) face (Tronick & Cohn, 1989). Such measures may lack ecological validity in two differing ways; parents and infants are filmed in unfamiliar environments and the parents may not exhibit behaviours that are relevant to the infants' daily experiences.

A recent review of measures used to evaluate caregiver-child interactions (Halle, Anderson, Blasberg, Chrisier & Simkin, 2011) identified 46 measures used with children under three years of age. Many were developed to investigate specific research questions with unpublished manuals. The majority required coders to allocate macro-analytic global ratings after a period of observation. The use of rating scales does not account for the brief moments of parental responding and encouragement of infant development. Research by Wahler and Leske (1973) comparing global rating scales completed with or without having accompanying continuous frequency recording demonstrated that ratings were only reliable when they were made after an objective observational procedure.

Research comparing partial time with momentary time sampling concluded that partial time sampling was more sensitive to change (Harrop & Daniels, 1986). A study by Meany-Daboul, Roscoe, Bourret and Ahern (2007) comparing continuous recording of stereotypy and self injurious behaviour using both momentary and partial time sampling techniques recommended partial time sampling as the best estimate of the frequency of responses.

A recent study, comparing the use of one brief video recording and weekly one hour coding of live interactions that lasted for a year, has shown that brief recordings are sufficient to account for the mothers' interaction style with their infant (Kenppinen, Kumpulainen, Rasanen, Moilanan, Ebeling, Hiltunen & Kunelius, 2005).

Recording interactions in the home environment removes the inconvenience and additional stress for the infants and parents, many of whom would not be willing or able to travel to the university laboratory to be assessed and should therefore sample more typical parental behaviours. Observations analysed away from the home are less intimidating than parents witnessing researchers making 'confidential notes' and recording involves less time commitment from busy and tired mothers caring for a young family. The observations can be collected and analysed independently reducing the potential for bias by researchers coding live after meeting the family. Inter-rater reliability can also be monitored using video recordings without requiring two researchers to travel to the participant homes. One other benefit is the ability to pause interactions and check back to ensure the accuracy of coding.

The Parent Infant Play Observation Code – PIPOc

Target PIPOc Behaviours

We wanted to develop a measure that could be implemented easily within the home requiring the minimal time commitment from busy families and low on technological reliance. The PIPOc was designed as a simple observational measure requiring minimal equipment – paper coding sheets, a timer and tripod-mounted video camera for recording the interactions for later analysis away from the home – enabling the code to be adapted for use in clinical and research evaluations with parents observed in a naturalistic environment.

Our main aim in developing the code was to evaluate whether parents' behaviour changed after attending an eight-week group-based infant parenting programme (Webster-Stratton, 2008). The behaviours of interest are linked to the abilities of infants in the first year and informed by the existing developmental literature and the content of the IYPB programme. Parental behaviours were the main focus in the development of the code. We were interested in evaluating the parental rates of physical contact, verbal and physical encouragement and direct responses to their infant's attempts to interact. The PIPOc incorporates components to identify positive parenting behaviours demonstrating parental warmth, engagement and stimulation of their babies' early development. Elements of the maternal responsiveness (Mellow Parenting code; see Mills & Puckering, 2001) and mind

related comments (Meins et al., 1998; Meins et al., 2001) have been incorporated into this new code. Additional categories include behaviours that demonstrate maternal sensitivity through affectionate touch and play and behaviours that encourage infant development (Iverson, 2010). The PIPOc is not intended to be an exhaustive list of maternal behaviours; therefore, caretaking behaviours such as nappy changing, bathing or feeding that are unlikely to occur during a brief observation were not coded. A brief behaviour description and reasons for adopting or rejecting target behaviours from the final version of the PIPOc are listed in Table 1.

PIPOc Behaviours: Categories Refinement

The code initially included 13 behaviour categories. After the first author reviewed the observations, it became apparent that some categories could not be reliably coded and four were rejected for this reason. These included: no stimulation; inappropriate developmental task; positive visual affect; and asynchrony with the infant.

Maternal sensitivity to distress at 6 months has been linked to fewer behaviour problems when the infants were 24 and 36 months old and greater competence when assessed at 18 and 30 months of age. Empathy and ignore (codes that reflected work investigating the difference between parental responsiveness to their infants' distress: Belsky, Kuang-Hua & Crnic, 1996; Leerkes et al., 2009) were originally included in the testing of the code. However, the parents in the present study were only instructed to play with their baby during the recording process and the protocol did not include any introduction of stressors. Consequently, parents were unlikely to demonstrate behaviours related to their babies distress. The frequency observed in the initial recordings was too low to be included in the final code; Empathy M=2.20; SD= 3.77, range: 0-19 and Ignore M=1.25; SD= 1.50; range 0-3 per 60 intervals.

Following identification of observable target behaviours a coding manual was developed for the remaining seven behaviours; this was later used to train an independent coder. The behaviour coded as Negative was observed at very low frequency (Baseline data N= 74, mean score = 0.23; range: 0-7, per 60 intervals) and had low inter-rater agreement calculated using Intra-class Correlation Coefficient (ICC = .176). So this category was also removed from the code (see appendix Q). The remaining six codes all targeted positive parenting behaviour.

Table 4.1
Description of the parental behaviour categories investigated in the development of PIPOc.

Behaviour Category	Definition	Trial Results
No stimulation	No visual or verbal stimulation within 10 seconds.	Rejected: Parent may be allowing infant to explore.
Inappropriate developmental level	Coded when parent is insensitive to the infant's developing abilities and makes demands, which may exceed the child's development stage.	Rejected: Difficult for a researcher to judge what may be beyond the infants' current ability.
Ignore	Parent ignores or responds negatively to her child's verbal or physical protest. This category may include persisting with a stimulating activity when the baby is falling asleep.	Rejected: This is situation-dependent behavior which required a distressed infant.
Empathy	Parent responds verbally and/or physically in a positive manner suggesting an awareness and empathy with the child's upset state.	Rejected: This is behavior required the infant to be upset.
Positive visual affect	Parent shows positive encouragement that is visible to the infant.	Rejected: It is difficult to code when parent's face was out of full view.
Asynchrony with infant	Parent continues with an activity despite of significant protest, crying or withdrawal from the infant. The parent may also restrict infant from exploration.	Rejected: Parents may be using distraction techniques to engage their infant's interest.
Negative	Child's neutral or positive action leads to a negative verbal/ action response from parent; this includes grimaces or critical remarks, finding fault in the activities, actions, products or attributes of the child.	Rejected: This category had low frequency and poor reliability scores.

Behaviour Category	Definition	Trial Results
Talk	Any neutral or positive vocal cues from the parents that encourage their infants to recognise sounds and label objects in their environment.	PIPO category
Play	Parent proactively initiates and sustains games with their infant with obvious positive affect as the parents' attempts to engage their infants' interest.	PIPO category
Touch	The parent physically touches or holds the infant in a warm affectionate manner.	PIPO category
Move	The parents encourage their infant's fine and gross motor movement, promoting the infant's physical development.	PIPO category
Mind	Parents verbalise the child's wants or emotions and help them label, identify and understand their emotions.	PIPO category
Respond	Parents respond in a neutral or positive manner to their child's neutral or positive vocal or physical actions. This implies that the adult recognises the infant as a separate individual with agency on their environment.	PIPO category

Table 4. 2

Distribution data on baseline PIPOc target behaviours and IT HOME subscales (N=74)

Target Behaviour	Mean	S.D.	Range
Touch	25.82	9.91	6-46
Move	15.25	8.72	1-39
Play	23.58	9.04	3-48
Talk	18.02	10.46	1-52
Mind	5.60	4.95	0-18
Respond	12.38	6.74	1-33
IT-HOME			
HOME Warm a	5.49	2.00	1-9
HOME Learn/Lit. b	8.12	2.11	4-12

Note: For PIPOc categories, possible range = 0-60.

IT HOME subscale items are listed in Table 4.3 Their possible range is a= 0-9 and b = 0-12.

The six target positive parenting behaviours were selected based on the existing evidence of their importance for infant development and to complement the content of the IYPB programme. Affectionate touch is the most basic form of interaction and has been associated with the development of bonding and attachment (Keren, Feldman, Eidelmean, Sirota, & Lester, 2003) and encouragement of postnatal brain maturation (Schore, 2001). Infants that are encouraged to move and explore their environment show increased rates of language acquisition with potential benefits for encouraging communication skills (Iverson, 2010).

Parents who talk more with their nine-month-old babies had children who showed better language skills when assessed at 12 and 18 months of age (Rollins, 2003). Mothers who produced more mind comments about their six-month old infants' internal mental states and processes tended to have infants that were classified as securely attached at 12 months using the Ainsworth Strange Situation Procedure (Meins et al., 2001), encouraged their child's social and emotional development (Meins et al., 1998) and theory of mind acquisition in preschool years (Symons et al., 2000).

Parental response to their infant encourages the infant to develop an appreciation of their autonomy and ability to have an impact within their immediate environment. Infants as young as two and three months of age will attempt to attract the attention of an unresponsive mother (Tronick & Cohn, 1989). Receiving acknowledgement for actions is rewarding and

facilitates cohesive family systems (MacDonald, 1992). Following recent research by Guajardo et al., (2009) on parental behavioural responsiveness, we wanted to evaluate whether parents responses to their infants physical actions and ability to label their infants mental states were independent or related to each other.

Play encourages parents to interact in close proximity with their infants and can help the infants to learn about their environment. Play has also been linked to better infant language acquisition (Newland, Roggman & Boyce, 2001) and development of social regulation skills. Poor social regulation skills have been shown to increase the levels of conduct disorders later in life (Panskepp, 2007).

Method

Participants

The PIPOc was developed as part of a repeated measures trial of a new parenting programme, which received ethical approval from the School of Psychology Bangor University and the Ethics Committee North Wales Health Trust (10/WNo01/40). This paper reports on data from 79 parents filmed playing with their infants (mean chronological age =12.50, 3 to 29 weeks) for 10 minutes at baseline and 63 that agreed to a follow up data collection visit (six months after baseline). All of the parents were biological mothers with a mean age at baseline of 26.94 years (range: 17 to 44 years) who gave their full consent to being filmed with their baby.

All of the home visits to collect data were arranged and completed by the first author and this continuity encouraged parents to feel at ease with the data collection process. Every effort was made to familiarise the parent and infant with the researcher's presence and visits were arranged when no other visitors were present. Following explanation as to the reasons for observation, parents were assured that only the research team would be allowed to view the recordings and that all recordings would later be destroyed in accordance with ethical guidelines.

Materials and Procedure

All of the dyads (mother and infant) were filmed in their homes; the rural settings of some families would have made it difficult for them to travel long distances to the University for recording. A total of 10 minutes of play was selected to accommodate the young age of

the infants, who sleep frequently in their first six months of life. We did not want to cause any undue pressure for the parents to play with infants that needed sleep and may not have wanted to engage for a long period. If the infants were tired or hungry the researcher arranged to return at a convenient time during the same day. Television can affect infants' ability to focus during play (Setiff & Courage, 2011) so parents were asked to minimise any distraction by switching off the television (see appendix P for parent guidance).

The video camera was placed on a tripod to record both mother and infant and to be as unobtrusive as possible; the researcher remained in the room to ensure the dyads were within camera shot. Mothers were asked to play with their infants for five minutes with no toys and for a further five minutes with a toy provided by the researcher. This ensured that the recordings contained an equal amount of time with no toys and minimised any bias that may be related to availability and/or selection of toys. The toys were selected as age appropriate and readily available: a smiley faced plastic rattle (with a face on one side, a mirror on the alternate side, and handles to allow the infant to grasp it) was provided at the first visit and a set of colourful soft blocks at the second visit (as a novel toy that would encourage mothers to interact and label the characters on the blocks).

The first author trained an independent coder who had not been exposed to situational variables, enabling her to concentrate on the maternal behaviours directed towards the infant rather than being distracted by the infants' siblings or pets that may also be present and was blind to the parent's condition in the study. Coding took place in a quiet office environment. The coder was prompted to code after a ten second interval by an electronic countdown signal. Ten seconds is sufficiently brief for concentration levels of the coder to be maintained. Each category was recorded only once within the 10 second time frame. This is because some of the parental behaviours of interest are states (e.g., holding) whereas others are events (e.g., talking), which makes coding of multiple instances in a short 10-second interval inappropriate and dependent on the subjective judgment of the coder. The final scores for each category are the number of intervals within which the target behaviour was seen to occur. Thus for each target behaviour, a dyad could score a minimum of 0 and a maximum of 60 (over 10 minutes).

Other Measures

During the home visits after the play had been recorded the first author administered a shortened version of the Infant-Toddler Home Observation for Measurement of the

Environment (IT HOME; Caldwell & Bradley, 2003). The items selected were grouped into two conceptually derived subscales, Parental warmth and Learning/Literacy based on the findings of Linver et al. (2004). Lists of the items (*N*=21) that contribute to the subscales used in this paper are given in Table 4.3. These subscales were selected as they include items that complement the behaviour categories selected in the PIPOc and were significantly associated with child cognitive outcomes (Linver et al., 2004). The subscale scores have been employed as an evaluation tool in the present research to assess the concurrent validity of the PIPOc codes.

Table 4. 3

Items scored during the home visit: Revised IT-HOME inventory

Item	Subscale
Parent spontaneously vocalizes to child 2+	a
Parent responds verbally to child's vocalizations/verbalizations	a
Spontaneous praise of child at 2+	a
Parent voice conveys positive feelings towards child	a
Parent responds positively to praise of child by visitor	a
Parent tells child name of person/object	a
Parent speech is clear and uses parentese	a
Parent converses freely	a
Parent initiates verbal exchange	a
Muscle activity toys	b
Cuddly/ role play toys	b
Music toys and books available	b
Mobile/ high chair/ play pen	b
Simple hand eye coordination toys	b
Toys provided for child during visit	b
Parent keeps child in vision/looks at often	b
Talks to child whilst doing housework	b
Consciously encourages developmental advancement	b
Invests maturing toys with value via personal attention	b
Structures play periods	b
Provides toys that challenge child to develop skills	b

Note. Subscales: a = Parental Warmth (items from Responsivity original subscale), b = Learning/Literacy (combined items from original Learning materials and Involvement subscales)

Manual Development, Training and Data Coding

Short-term test-retest data was not collected for the code development due to time restrictions. Interested parents (*N*=80) received home visits from the first author over a

period of 64 days and repeat visits were not feasible within this time period, because participants lived across a large geographical area of Wales.

The first author conducted code-recode tests with at least two weeks between first and second coding of each recording (*N*=15 observations). ICC calculations were used to assess the agreement based on the total score for each category. Intra-observer reliability was good across all categories (ICC range: .671 to .922).

Following the establishment of acceptable intra-observer reliability a coding manual was finalised (see Appendix Q) and a psychology graduate was trained to be the reliable primary coder for all the recorded interactions. Observer training was administered by the first author and involved detailed discussion of the categories using the manual, role-play, discussion and illustrations of target behaviour using training recordings. Corrective feedback was given after the coder independently assessed the training videos. This training was delivered over a period of seven days and took a total of 27 hours to complete. Inter-rater reliability between the trainer and independent coder, following training and independent coding of 15 observations, was excellent (ICC range .844 to .936). Having established this, the independent coder scored all interaction videos; these data have been used for all reported analyses. Finally, inter-observer agreement between the first author and primary coder was checked against observer drift using a sub-sample of randomly chosen videos (*N= 37,* 20%) taken from baseline and follow up visits and resulted in very good to excellent reliability rates for six of the categories (ICC range: .654 to .894); see Table 4.4 for a summary of the ICC scores during and after training.

To summarise: this paper reports the observation data from the baseline and 6-month follow up visits coded by a blind independent coder together with IT HOME subscale scores recorded by the first author at these home visits.

Table 4.4

ICC results of the intra and inter-rater reliability checks on a (20%) random sample of recordings

Category	Code –Recode (*N*= 15)	Training (*N*= 15)	Random (*N*=37)
Touch	.863	.894	.729
Move	.896	.847	.714
Play	.922	.936	.755
Talk	.876	.883	.760
Mind	.971	.844	.894
Respond	.671	.889	.654

Note. ICC single measures: moderate = .5 to .6; strong = .7 to .8; excellent = 0.8+

Results and Discussion

Mean, standard deviation, and range scores of the six PIPOc target behaviours at baseline and follow up are presented in Table 4.2. Spearman's rho correlational analysis was used to examine the relations between the scores for the target behaviour categories at baseline. This resulted in the identification of small but significant inter-correlations between the scores for one or more of the target behaviour categories (see Table 4.5).

Table 4.5
Spearman's Rho correlations between six PIPOc target categories at baseline

	2	3	4	5	6
1. Touch	.295*	.079	-.013	-.093	.073
2. Move		.242*	.002	.002	.321**
3. Play			.08	-.232*	-.091
4. Talk				.161	.265*
5. Mind				-	.444**
6. Respond					

Note: *N*=74; * $p<.05$; ** $p<.01$ (2-tailed).

Next, correlational analysis was followed by Exploratory Factor Analysis (EFA) of the scores to enable us to identify clusters of target behaviours. We assessed the suitability of the correlation matrix for a factorial model by examining the results of the Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy and Bartlett's Test of Sphericity. The KMO value of .514 was found to be within the acceptable range specified by Field (2009; .5 to .7). Even though our sample size was small (N= 79), the significant result for the Bartlett's test (p<.01) suggested that the relationship between the variables was strong enough to proceed with EFA.

To reflect the small sample size, we increased the minimum acceptable absolute value for the factor loading from the usual .30 (or .40) to .60 for inclusion in the factor structure. This was done by applying Stevens' (2002) formula (for N=74 factor loading should be larger than .57, p<.01). This correction would allow for extraction of a simple factor solution that was based on the sample size.

Following the failure to extract a simple factor solution using Maximum Likelihood and Principal Axis Factoring with and without rotation, Principal Components Analysis (PCA) with Varimax rotation was employed. This resulted in a three-factor model being extracted from the data that accounted for 69.48% of the total variance. Factor 1 which we termed sensitive parenting (Sensitive for short) had an eigenvalue of 1.62 and accounted for 27.03% of the variance. Factor 2 which we termed physical encouragement (Physical for short) had an eigenvalue of 1.46 and accounted for an additional 24.41% of the variance. Lastly, Factor 3 which we termed verbal engagement (Verbal for short) had an eigenvalue of 1.08 and accounted for 18.03% of the variance. The successful extraction of a simple factor solution enabled the author to reduce the original list of six target behaviour codes to three new behaviour components based on the factor loadings within the rotated factor structure matrix.

A further PCA with Varimax rotation of the scores for the six target behaviours at six-month follow up (N= 63) was conducted to evaluate the reliability and stability of the three new behaviour components (factors). The model was fixed in accordance with the procedures used to extract the baseline factor solution. The follow-up factor analysis delivered the same factor solution as baseline and accounted for 76.68% of the total variance. Table 4.6 shows factor loadings of the six original PIPOc categories at baseline and follow up. This result shows that the factor structure was robust and reliable.

Table 4.6.

Exploratory Factor Analysis, PCA with Varimax rotation.

Target Behaviour	Factor	Baseline N=79			Six-months later N= 63		
Touch	Physical		.756			.951	
Move			.786			.632	
Play	Verbal			.608			.865
Talk				.776			.878
Mind	Sensitive	.839			.794		
Respond		.767			.814		

Table 4.7

Spearman's rho correlational analysis between the PIPOc components and the IT HOME subscales at baseline and follow up

Measure	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Sensitive PIPOc $_a$	.112	.056	.060	.250*	.150	.090	.285*	.391**	.300**
2. Physical PIPOc $_a$		.088	.266*	.212	.065	.119	.225	.026	.073
3. Verbal PIPOc $_a$			.438**	.142	.230	.096	.434**	276*	.139
4. Warm HOME $_a$				.269*	.275*	.021	.156	.352**	.085
5. Learn/Lit. HOME $_a$					-.312*	.339**	.183	.180	.250*
6. Sensitive PIPOc $_b$						-.202	.047	.081	-.133
7. Physical PIPOc $_b$							.170	-.122	-.004
8. Verbal PIPOc $_b$								.413**	.343**
9. Warm HOME $_b$									.414**
10. Learn/Lit. 11 HOME $_b$									

Note: "a" denotes baseline scores (*N*= 79) and "b" denotes follow up scores (*N*= 63). Asterices show: * $p<.05$, ** $p<.01$

Next, the composite scores derived from the factor solution for the new three behaviour components were tested for concurrent validity using two IT HOME subscale scores collected at baseline and six-month follow up: Parental warmth (Warm) and Learning/ Literacy. The means, standard deviations and ranges of the IT HOME subscales are listed in Table 4.2. The Spearman's rho inter-correlation matrix of PIPOc component scores and IT HOME subscale scores at baseline and follow up is presented in Table 4.7. The results show that parents' scores on these two HOME subscales correlated with each other at baseline (rho=.269, $p<.05$) and at follow up (rho=.414, $p<.01$).

Theoretically, we would expect that verbal PIPOc component scores should correlate well with Warm IT HOME scores that also include various measures of parental speech (see Table 4.3). Indeed, the two sets of scores were highly correlated in both baseline (rho=.438, $p<.01$) and in follow up (rho=.413, $p<.01$) measures; and sensitive PIPOc scores at baseline were correlated to Warm IT HOME scores at follow-up (rho=276, $p<.05$) and to Learn/Literacy IT HOME scores at follow up (rho=.343, $p<.01$). In addition, we also found that PIPOc verbal encouragement behaviour scores were correlated across the two time points (rho=.434, $p<.01$) and that Warm IT HOME scores also correlated well between baseline and follow up (rho=.352, $p<.01$).

Mothers that scored highly on PIPOc physical engagement component in the observation were also rated as high on the IT HOME parental warmth subscale at baseline (rho=.266, $p<.05$) but this relationship was not found in follow-up. This is probably an effect of infants' age: The mothers at baseline held their infants closely during the play interactions and this close proximity may have encouraged the mothers to interact verbally and praise their baby contributing to the correlation with the IT-HOME Warm subscale.

Theoretically, we expected that PIPOc maternal sensitivity scores, which rated the mothers' capacity to respond to her infants' physical actions and internal mental states, should correlate with Learn/Literacy IT HOME scores, which contained measures of parental provision of opportunities for physical and mental development. This relationship was indeed found at baseline (rho=.250, $p<.05$) and at follow-up (rho=.300, $p<.01$). In addition, PIPOc Sensitive component scores at baseline were positively correlated with Warm IT HOME scores at follow up (rho=.391, $p<.01$) and with PIPOc Verbal scores at follow up (rho=.285, $p<.05$).

In summary, the overall pattern of correlations shows concurrent validity of our new PIPOc component scores against two subscales of a well-established measurement instrument, IT HOME. They also point to interrelatedness of positive parental behaviours, verbal and non-verbal, in the first six months of infants' life.

Discussion and Conclusion

This article describes the development and testing of a simple observational code that was devised to evaluate parental play behaviour with their infants. The PIPOc was developed to include target behaviours that support infant development during the first months of life.

Initial investigations and trial coding of recorded interactions resulted in target behaviours that were not observable in the naturalistic play setting being systematically eliminated from the final measure. With the aim of creating a parsimonious behaviour code, the statistical analysis resulted in three main positive behaviour components, each containing the scores from two defined target behaviours. The final components of sensitive parenting, physical and verbal encouragement accounted for over 69% of the total variance at baseline. The factors remained stable over the six-month period and accounted for 77% of the total variance at follow-up.

The positive parenting components identified in this study add to the current literature on responsive parenting. The EFA enabled us to construct a theoretical combination of the target behaviours of responding to the baby's actions and verbalisations and mind-minded commentary which reflect the parents' interpretation of how the infant was feeling at the time. The present results support the proposition by Guarjado et al. (2009) that parents who are responsive in the behavioural domain also show cognitive responsiveness to their infants.

The physical encouragement component was more evident at the baseline observations as mothers held their babies close during the play session. Developmental changes during the intervening six months resulted in the infants sitting or crawling independently at the second observation – resulting in less physical touch.

Limitations of the study include lack of short-term test-retest data and small sample size. Further tests with larger samples would benefit the PIPOc development to establish norms and confirmatory factor analysis would be useful to evaluate if the factors identified in the present study remain stable within a larger sample. Another limitation is the use of revised IT HOME subscales which currently lack data on norms, the use of another validated observation tool in future evaluations would be worthy of further development.

Our new measure is practical and easy to use. It enables researchers and clinicians to evaluate parent behaviour with their infant in a natural environment and with minimal disturbance to the family. By video-recording the interactions, the accuracy of coding can be checked by two people, coding the same recording independently. A possible further use for the code may be in video feedback to parents. Parenting programmes such as the Circle of Security (Hoffman, Marvin, Cooper & Powell, 2006), VIPP (Bakermans-Kranenburg, Juffer,

& Van Ijzendoorn (1998) and Mellow Parenting (Mills & Puckering, 2001) use recordings of parents with their children as a tool during intervention where parents are shown selected video recordings of themselves with their babies to highlight areas of improvement or difficulty.

The PIPOc components scores showed promising correlations with both IT-HOME subscale scores at the first and second data collection points. Further use of the PIPOc comparing parents that attended an intervention with controls will increase our understanding of the value of early parent support programmes and their effectiveness and is the subject of a paper currently in preparation.

CHAPTER 5

STUDY 3

A COMPARISON PILOT STUDY OF A NEW GROUP-BASED INFANT PARENTING PROGRAMME

[3]

[3] This chapter presents the third Thesis paper currently under review for publication.
Jones, C.H., Hutchings, J., Erjavec, M. & Viktor, S. (2013). A Comparison Pilot Study of a New Group-Based Infant Parenting Programme.

Abstract

Background: Children living in poverty are at increased risk of poor socio-emotional skills development and academic underachievement, which can lead to problems that persist into adulthood. Recent government initiatives across the UK have established early interventions to support families living in areas of social disadvantage. While group-based parenting programmes are recommended for treating conduct disorder in older children, it is not yet known whether they have a positive effect early in life. This paper reports the first known evaluation of an eight-week Incredible Years Parents and Babies group-based programme designed to promote parent-infant attachment and prevent problems from developing.

Method: We collected baseline measures in the children's homes when they were an average three months old, and follow up measures six months post-baseline(*N*=63). Mothers were recruited consecutively to the intervention group and then once sufficient numbers had been recruited for the group subsequent mothers were recruited to the comparison control group. Mothers' positive play behaviours were independently coded from video recordings taken in the home. Other measures included socio-demographic data and self-reported maternal variables including self-efficacy and well-being and safety awareness. The home environment was rated for elements likely to encourage infant development and infants' development was also assessed.

Results: After controlling for baseline scores, mothers that attended the programme (*n*=39) were observed to be more sensitive towards their baby during play when compared to the mean scores for the control mothers (*n*=24). Self-reports of maternal confidence, mental well being and safety awareness and infant development were all scoring highly at baseline and no differences were found between the two groups on these measures.

Conclusion: This paper provides limited evidence for the effectiveness of the Incredible Years Parents and Babies group-based programme delivered in the first year of life. Further evaluation is needed to confirm and extend these results.

Introduction

Recent recognition that the quality of children's early environment has long-term implications (Shonkoff, 2011) has resulted in increasing political support for primary preventative family support across the UK (Allen, 2011). This new focus has also increased demand for effective programmes that support parents and their children in the early years. Systematic reviews evaluating the effectiveness of support for mothers of young children report improvements in children's social, emotional and cognitive development and mothers' psychosocial health (Bakermans-Kranenburg et al., 2003; Barlow, Coren, & Stewart-Brown, 2009; Barlow, McMillan et al., 2010; Barlow, Smailagic, Ferriter, Bennett, & Jones, 2010; Bryanton & Beck, 2011; Furlong, McGilloway, Bywater, Hutchings, Smith, & Donnelly, 2012; Jones, Hutchings, Erjavec, & Hughes, under review; van IJzendoorn et al., 1995).

A review by van IJzendoorn et al. (1995) of 16 individual support programmes for parents in the first 18 months of their infants' life reported that early interventions had the greatest effect on maternal sensitivity (Cohen's d= 0.58, Cohen, 1988) with less effect on infant attachment security (d=0.17). Bakermans-Kranenburg et al.'s (2003) meta-analysis included 70 intervention studies that started before the child was 54 months of age and reported enhanced parental sensitivity and infant attachment security. The randomised controlled trials (RCTs; n=51, including 6,282 mothers) showed that these programmes were moderately effective in enhancing maternal sensitivity (d=0.33) and infant attachment security (d=0.22).

A secure attachment figure can be a protective factor against poor outcomes and improve the emotional and behavioural adjustment of young children (Barlow, McMillan et al., 2010). Establishing a secure and positive relationship during childhood helps to protect the child from risk of poor social skills development and criminality associated with growing up in a disadvantaged environment.

Parenting programmes are effective in preventing violence and antisocial behaviour in clinically referred and high-risk children (Furlong et al., 2012). In times of financial constraints selecting the most cost-effective programme is important. Over 900 programmes have been developed to support parents 'and children's' skills and the Blueprints for Healthy Youth Development website (http://www.blueprintsprograms.com) use strict criteria, such as

a strong research design with evidence of effectiveness replicated in multiple sites, to review which prevention programmes would be most effective in preventing violence (Olds et al., 2001). Only a small number of parenting programmes meet the Blueprints inclusion criteria as model or promising programmes. These include the "model" Nurse Family Partnership (NFP) and "promising" Incredible Years (IY) parent programme.

The NFP provides first time mothers with weekly nurse home visits from the antenatal period until the child is two years of age (Olds et al., 2011). Extensive research on the NFP in the USA by Olds and colleagues has demonstrated long-term benefits. These include improved pre-natal health, longer spacing between the birth of the first and second child, reduced childhood injuries, improved school readiness and reduced dependency on welfare payments (Goodman, 2006; Olds et al., 1998; Olds, Sadler, & Kitzman, 2007). These benefits are estimated to contribute to savings of between two (Lee et al., 2012) and four times the cost of providing the NFP programme (Karoly et al., 1998; Olds et al., 1998). This programme (called the Family Nurse Partnership in England), is currently (2008-2013) subject to a Department of Health £4,000,000 funded randomised control trial in 60 English sites (Sanders, Owen-Jones & Roblin, 2011). However, intensive individual home-based family support can cost $9,600 per family (Lee et al., 2012) and this limits the number of mothers that can access the support. Cunningham et al. (1995) compared individual support with group-based parent training and showed that groups with at least three families were cost-efficient. Another study by Badger (1981, cited in Coren, Barlow & Stewart-Brown, 2003) comparing the effectiveness of individual versus group-based support for teenage mothers found more positive changes in high-risk mothers that attended the group-based programme.

Parenting groups have been offered to parents of school-aged children with behaviour difficulties for the last five decades. Numerous randomised control trials (RCT) have shown that they are effective in improving the parents' and children's behaviour and mental health, and in reducing children's behaviour problems (Barlow, Smailagic et al., 2010; Furlong et al., 2012; Piquero, Farrington, Welsh, Trembay, & Jennings, 2009; Reid, Webster & Hammond, 2003). However, there is limited evidence for group-based primary *prevention* programmes with parents and their babies that encourage positive relationships and skill development to

prevent problems from emerging (Jones et al., under review). The present paper reports the results of a trial designed to test the effectiveness of one group-based infant parenting programme.

The Incredible Years Parent and Child Programmes

The Incredible Years (IY) parenting programmes are part of a suite of programmes for parents, children and teachers, developed by Webster-Stratton (2011). They have all been evaluated however the parenting programmes have been most extensively researched by the developer and independently evaluated in real world settings (Gardner, 2012; Gardner, Burton, & Klimes, 2006; Hutchings et al., 2007; Reid, 2003; Webster-Stratton, 2011). The National Institute for Health and Clinical Excellence (NICE, 2007) included the IY BASIC parent programme (for parents of children aged 2 to 8 years) as one of the recommend group-based, parenting programmes for the management of children with conduct disorder. The parent programme is also recognised as promising by the UK National Parenting Academy (www.education.gov.uk/commissioning-toolkit, 2013) and has Blueprint for Violence Prevention "promising" status (http://www.blueprintsprograms.com).

The IY parent programmes are based on the social learning theory principles, including modelling positive parenting practice in groups. Parents are encouraged to establish a positive relationship with their child through joint activities and praise. Groups are co-led by two trained leaders who encourage parents to identify important parenting principles in a collaborative and supportive group environment. During the meetings parents work together to problem solve common parenting challenges using cognitive behavioural techniques. Pre-recorded vignettes of parent-child interactions that illustrate different key parenting behaviours are discussed in the group. In the IY Parents and Babies (IYPB) programme parents are encouraged to understand their babies' needs and cues in the first months, the importance of nurturing language and social skills in addition to the discussions on weaning and establishing effective routines. Group-based programmes can also support the development of parents' social support networks at a time that may be isolating for parents and group leaders encourage parents to contact each other for additional support.

The programme avoids the stigma that can be associated with being referred to

receive support when older children are already exhibiting emotional or behavioural difficulties. This could make parents more likely to accept and engage with the programme. In addition, the birth of a child is an important transition period in all families, which may make parents receptive to learning new skills to provide the best possible support for their baby.

The IYPB and IY Toddler programmes (Webster Stratton, 2008) were introduced in Wales in 2008 to meet the increasing demand for a programme to support parents in the early years. The Welsh Government supported leader training for over 475 parenting workers to deliver these programmes. The 12-week toddler programme was evaluated in a recent RCT (Griffith, 2011). Results found significant improvements in observed negative parenting and child deviance and improved maternal mental well-being relative to waiting list control mothers (Griffith, 2011).

This paper reports the first evaluation of the IYPB programme. Based on the existing literature, we hypothesised that mothers would show more positive parenting behaviours and that maternal confidence and well-being would improve as the result of the intervention. Finally, we hypothesised that intervention mothers would become more aware of the importance of stimulation in the first year and the potential hazards in the home, when compared with mothers who had not attended the programme.

Method

Design

This was a community based, small-*N*, repeated measures pilot study of a new parenting programme with mothers allocated consecutively to intervention or control group. Full ethical approval was obtained from the School of Psychology, Bangor University and the North West Wales NHS (10/WNo01/40). This paper reports on data collected from mothers at two time points (IYPB group $n = 39$, $n = 24$ control). Follow up data (Time 2) was collected six months post-baseline ($M = 26$ weeks between visits, SD= 8). The full study protocol is available in Appendix N with description of the study methods in Chapter 3. All measures were collected in the mothers' homes by the first author. Another trained

researcher, blind to intervention status, coded the recordings of mothers playing with their babies.

The study's eligibility criteria required the babies were between 2 and 16 weeks old at baseline (mean age at baseline = 12.27 weeks, SD= 4.96) and living in a socially disadvantaged area. Although the mothers completed self-report measures in English they were told that they could interact with their baby in their first language (81% English and 19% Welsh first language mothers). Mothers who had previously attended an IY parent programme or were currently receiving individual parenting support were not eligible to take part in this study.

Recruitment

Interested service managers and group leaders trained in delivering the IYPB programme in North- and Mid-Wales were briefed on the study aims, research design and target dates for recruitment. Following a service level agreement by the service managers the IYPB group leaders submitted the contact details from 90 interested mothers to the researcher. Eighty-eight were contacted by telephone and 80 received participant information sheets before an initial home visit by the researcher. The study was explained to the mothers and any questions related to the study were answered. Seventy-nine mothers consented to be part of the study and baseline measures were collected on the same day. Baseline data was collected in two consecutive waves (Autumn 2010- Spring 2011). This paper reports data from mothers with their infants (N=63) that provided both baseline and follow up data (six months after baseline). Figure 3.1 shows a consort diagram of the numbers of families interested and involved in the study.

Participants

Funds and practicalities did not allow for a fully randomised design. Families who were living in areas that were delivering the IYPB programme, met the eligibility criteria and gave consent to be part of the study, were sequentially assigned to the IYPB group on a first come first served basis. Once a sufficient number of families were recruited for a group,

waiting list control families were recruited from the same areas and informed that they would be offered places on the IY toddler programme after the six month follow-up assessment.

Fourteen mothers who were offered a place on the IYPB programme did not attend any sessions. Reasons were obtained from 13 mothers; four stated their child was ill, three had returned to work, two reported a family crisis, one each stated that the group time clashed with a breast feeding support group, they had moved to a new location, that they lacked childcare for older siblings or that they lacked transport to the group (for more details see: Jones, Hutchings, Erjavec, & Hughes, 2012; Chapter 6). Mothers that were offered a place but did not attend a group were thanked for their initial interest and released from the study. A summary of the demographics of all mothers that provided baseline data is presented in Table 5.1.

Procedure

The researcher arranged and completed all of the home visits and this continuity encouraged mothers to feel at ease with the data collection process. Every effort was made to familiarise the mothers and babies with the researcher's presence and visits were arranged when no other visitors were present. Following explanation of the reason for the video recording, mothers were assured that only the research team would view the videotapes and that the recordings would be kept securely in accordance with ethical guidelines. Family demographics, health and social contacts, were collected at baseline and all other measures were collected both at baseline (Time 1) and six months later (Time 2). Mothers were given £10 at each time-point as an acknowledgement of their contribution to the study. The IYPB groups were delivered in communities that also had other early years support freely available to parents of children under four years of age. Half of the parents in our evaluation were living in designated Flying Start (FS) areas (Children and Young people [WG], 2009). These areas were established by the WG in 2006/2007 in specific areas of deprivation defined on the Welsh index of multiple deprivation (Statistics department [WG], 2011) that would benefit from additional early years support; other FS support involved the WG funded Language and Play projects, free childcare provision and other parenting support groups such as breastfeeding or parent and babies groups. The six-week Language and Play projects are

designed to encourage parents to stimulate early learning through set activities (Social Research Institute [WG], 2011).

Following recruitment, group leaders were provided with details of mothers that had consented to the study so that they could contact them with the arrangements for the IYPB group in their area. Group leaders were contacted again after the six month follow-up assessments had been completed to remind them that control parents were now eligible to be invited to join the next available IY Toddler parenting group in their area.

Parents and Babies Group Delivery

The IYPB groups (*n*=9) were delivered between September 2010 and March 2011 during the day, in community settings in nine towns in North- and Mid-Wales. The programme has eight weekly two-hour sessions. This required careful planning to ensure a convenient location, enough room to accommodate prams and age appropriate equipment for changing, feeding and play activities. Half of the mothers were first time mothers reducing the additional costs of crèche support for older siblings, preschool nursery support for siblings was provided in some venues.

All group leaders (*N*=17, one leader delivered two groups) had received the two-day IYPB leader training and each group was co-led by two leaders. The leaders were mainly health visitors (*n*=10), other professions included family centre managers, specialist behaviour practitioners, parenting workers, educational and child psychologists. The majority of the leaders (*n*=14, 82%) were leading their first IYPB group; five (29%) had not delivered any IY parent programmes prior to this study.

All material required for the groups was provided, including bilingual parent hand-outs, agendas, stationary and small gifts for parents to encourage attendance. A budget of £30/parent was provided for meals/snacks for group members. Group leaders encouraged parent attendance through weekly telephone calls and mothers who completed weekly assignments were entered into a weekly draw for a small gift. A buddy system linking group members with each other for additional support is introduced as part of the programme and was encouraged by leaders. All group sessions were recorded.

Group leaders recorded attendance (mean attendance 6.82 sessions, SD = 1.88). Mothers completed weekly evaluations at the end of each session and an end of programme parent evaluation questionnaire (*n*=34). Feedback from the group members and group delivery cost are reported in Jones et al. (2012; see Chapter 6).

Supervision of Group Leaders

Group leaders were offered weekly supervision with an IY mentor with 78% attendance by at least one group leader. During supervision leaders reviewed recordings of sessions, brainstormed solutions to issues or problems that had arisen and planned delivery of the next session. Leaders used weekly session checklists to record which parts of the programme had been delivered in the sessions.

Outcome Measures

Measures were selected to reflect the content of the IYPB programme and the following section is a brief description of the outcomes used in the study, further details are available in Chapter 3.

Parent Observation

The primary outcome measure was the behaviour of the parent observed during a ten minutes video-recorded semi-structured play session that was recorded in the home. Observation is regarded as the gold standard method of assessing behaviour (Gardner, 2000). Following examination of existing parent-child observation codes (DIPICS, Robinson & Eyberg, 1981; Mellow parenting code, Mills & Puckering, 2001; & CARE-Index, Crittenden, 1979) a new code targeting the specific positive parenting behaviours encouraged in the IYPB programme was developed to evaluate mothers' responses to and encouragement of their babies' socio-emotional and physical development – Parent Infant Play Observation code (PIPOc; Jones, Hutchings, Erjavec, & Viktor, submitted). The six target behaviours: (i) Affectionate touch; (ii) Encourage movement; (iii) Talking; (iv) Playing; (v) Responding to baby; and (vi) using Mind related comments with their baby were selected based on the

existing literature on positive parenting practice the coded behaviours were also combined to form a global PIPOc score for each parent.

A factor analysis of the PIPOc yielded three positive parenting components, (i) Physical Encouragement (ii) Sensitive Parenting and (iii) Verbal Engagement.

Parent Self-Reported Measures

Parental perceived sense of confidence and general mental well being were collected using two self-rated questionnaires the Karitane Parenting Confidence Scale (KPCS; Črnčec et al., 2008) and the Warwick Edinburgh Mental Well Being Scale (WEMWBS; Tennant et al., 2007).

***Karatine Parenting Confidence Scale* (*KPCS;* Črnčec et al., 2008).** The KPCS measures perceived parenting self-efficacy for parents of children aged 0 to12 months old. Parents select one of three or four possible answers on a Likert scale, across 15 items, with total scores ranging from 0 to 45 (see Appendix R). A higher score indicates higher level of parenting self-efficacy. The KPCS was developed to evaluate the effectiveness of the authors' parent craft programmes in a clinic setting in Australia. Kohloff and Barnett (2013) report the KPCS total scores from mothers (n=83) with babies mean age of 5.3 months (SD = 3.2) enrolling on a four day residential programme to resolve parenting problems to be mean = 33.70 (SD=5.92).

Warwick Edinburgh Mental Well Being Scale (WEMWBS). The WEMWBS includes 14 positive mental health items with a possible score range of 14 to 70; a higher score indicates higher level of mental well-being (see Appendix S). Tennant et al. (2007) reported a population mean score to be 50.7 with a 95% confidence interval (50.3 to 51.1). The IY Toddler evaluation (Griffith, 2011) collected WEMWBS total scores from parents of 21-month old children (SD=7.28) with baseline mean scores of 47.37 (SD=10.18) and six month follow up scores of 50.95 (SD=8.61) in parents that received the intervention.

Safety Awareness

The highest unintentional mortality rate in under 20 year olds is recorded in the under one-year olds (96.1 per 100 000; WHO, 2006). The latest figures on UK deaths by age show that the number of death in the first year (*N*=261) is 187% higher than the deaths of children 1 to 2 years of age (ONS, 2012). Studies have found correlations between child injury, mortality rates and socio-economic deprivation (Kirkwood, Parekh, & Pollock, 2010).

The IYPB programme includes guidance on 'baby proofing' the home to prevent unintentional injury. However, no validated measures were found to assess parents' awareness of potential hazards in relation to young babies in the home. The Hunt the Hazard posters (Royal Society of Prevention of Accidents: RoSPA) were used to measure parental awareness of dangers within the home. Mothers were asked to highlight any potential hazards in pictures of rooms in the home. The percentage of correctly identified hazards was used as a measure of hazard awareness.

Home Environment

The Infant-Toddler Home Observation for Measurement of the Environment inventory (IT HOME; see Bradley & Caldwell, 1976; Caldwell & Bradley, 2003) has been used extensively in research. It allows researchers to score the immediate home environment related to early child development. The measure used in this evaluation included 32 items selected from the inventory, which were rated using a binary scoring system by the first author from observation and parent report (see Appendix T).

Parent Demographics

Demographic information was obtained from a semi-structured interview based on the Personal Data and Health Questionnaire (PDHQ; Hutchings, 1996) (see Table 5.1).

Socio-Economic Disadvantage (SED6). Data for the SED6 is derived from the PDHQ. Six socio-economic risk factors are binary scored and totalled into one score – the higher the score, the higher socio-economic disadvantage. The risk factors in the SED6 include one point for each identified risk factor. The factors include, for the primary provider in the

household: reliance on benefits, being a single parent, a large family size (three or more children), mother's education up to 16 years of age, living in a high total crime area (Police-crime-map www@businessconsultant.co.uk/police-crime-map/index.php) and poor housing rated according to the Housing Health and Safety Ratings System (DCLC, Government, 2004).

Social Contacts. Mothers were asked how many social contacts with friends, family and others they had in the previous seven days. This was used to monitor whether programme attendance increased the mothers' frequency of weekly contacts. Only mothers that the previous weeks contacts had been typical in relation to number of social contacts at T1 and T2 (n= 37) were included in the analysis.

Poverty Levels. The study targeted parents that were living in socially disadvantaged areas. Persistent poverty as this has been reported as a significant risk factor to parenting (Conger, McCarty, Yang, Lahey, & Kropp, 1984). Parents were asked, after excluding housing costs working tax and family credit, how much weekly income (wages or social security payment) they had to pay their living expenses. Income was assessed (equivalised) according to household size and composition.

Infant Development

The researcher was trained to administer the British Griffiths Mental Development Scales- Revised: Birth to 2 years (GMDS 0-2; Griffiths, 1954) to evaluate the infants' rate of development at each time point. Griffiths (1954) reported good retest scores over an average of 30 weeks (n=*60, r* = 0.87). The retest scores were much lower in a study by Hindley (1960) evaluating the Griffiths scores over 3 to 18 months of age (n=209, r= 0.46-0.58). The GMDS 0-2 is an established measure for research and clinical purposes. The revised scales (Huntley, 1996) that have been standardised on n=665 children were used in this trial. The measure was used to check that both groups were well matched at baseline and to evaluate whether infants in the intervention group showed a greater rate of development at follow up. The scale has five subscales (Locomotor, Personal-Social, Language, Hand and Eye

coordination and Performance), which combine to provide an overall developmental quotient (GQ) and infants' were assessed at T1 and T2. The revised scale mean GQ is 100.05 (*SD*=11.8).

Results

Attrition

Independent samples *t*-tests and Pearson's Chi Square tests run in crosstabs were performed to compare the baseline data collected from parents that remained in the study at Time 2 (*n*=63) and those that withdrew after baseline measures were collected (*n*=17). Overall, analysis of the demographic and main target variables identified that those who completed the study did not differ significantly from those that withdrew prior to the intervention (*n*=14) or those that were unavailable for follow up (*n* = 3).There were no significant differences between the mothers' PIPOc and I-T HOME scores, self-efficacy (KPCS), mental well-being (WEMWBS), babies' Griffiths GQ scores, or mothers' age at baseline scores. The only significant difference between families that choose not to progress after baseline measures were collected was the age of their babies at baseline. The families that left the study were found to have younger babies (*M*=8.94 weeks, SD=3.33) than those that remained in the study (*M*=13.27 weeks, SD=5.26), *F* (78,1)=1.672, *p*=.002.

Demographic Data

Based on the current literature, a selection of the demographic data is summarised in Table 5.1; additional socio demographic details are available on request from the researcher (first author).

Table 5.1.

Demographic data collected at Baseline for all recruited families

Demographic data	IYPB (*n*=39) *Mean (SD)*	Control (*n*=24) *Mean (SD)*	Attrition (*n*=17) *a* *Mean (SD)*
Infant mean age (wks.)	12.27 (4.96)	14.71 (5.51)	8.94 (3.33)*
Mother age at first birth	22.58 (5.80)	24.33 (4.67)	22.29 (4.20)
Mother mean age	26.38 (6.23)	28.13 (5.35)	27.06 (6.36)
	Count (%)	*Count (%)*	*Count (%)*
Male index child	19 (47.5)	14 (58.3)	10 (58.8)
First born	20 (50)	13 (54.2)	8 (47.1)
Teen pregnancy	16 (17.5)	3 (12.5)	5 (29.4)
Single/Living apart	11 (27.5)	2 (8.3)	7 (41.18)
Cohabit/married	29 (72.5)	22 (91.7)	10 (58.82)
Flying start area	22 (56.4)	9 (37.5)	8 (47.1)
Household in poverty	35 (85)	21 (87.5)	15 (88.2)
Neither working	9 (22.5)	4 (16.7)	6 (35.3)
Single parent	10 (25.0)	5 (20.83)	3 (17.64)
Both in work	21 (52.5)	15 (62.5)	8 (47.06)

*Note: a = 14 did not attend any IYPB group meetings, 1 attended 8 meetings but did not attend follow up and 2 were mothers from the control group, *=p= .002.*

Sample Characteristics

All study participants were biological mothers (mean age at baseline of 26.94 years (range=17 to 44, SD=5.93). The babies were *N*=33 male (52.4%) and *N*=30 female (48.6 %).

Welsh was the first language for 12 mothers, (19.0%) equivalent to national proportions (Language Census [WG], 2011) with the remainder identifying English as their first language (*N*=51, 81.0%). The mean age of mothers leaving full time education was 16.67 years (range 13-22, SD=1.49). The proportion of workless households in the study was 20.6%, midway between the reported Welsh (22.4%) and United Kingdom (18.9%) rates (Welsh Government statistics, 2012). Although only 13 families were 'workless' with both parents unemployed, a much higher proportion of the families were classified as living in poverty (*N*=54, 85.7%) compared to the latest United Kingdom (2009-2010) figure of 29% (Aldridge, Parekh, MacInnes & Kenway, 2012). This high proportion may be due to the specifically asking parents to eliminate housing cost and tax credit when declaring their weekly disposable income. Preliminary analysis of the reported social contacts showed a great deal of variability with *M*=14.92 hours, *SD*=16.5, range 0 to 109 hours in the previous seven days, and this data was not included in further analyses. There were no differences between parents' attendance at other early year's projects with their baby between T1 and T2. Families living in Flying start (*n*=31, *M*= 25.35hrs, SD=35.27) and non-Flying start (*n*=32, *M*=24.66, SD= 35.22) areas reported equal time spent in baby related social activities.

Baseline Comparison of IYPB and Control Group Demographic Scores

Independent samples *t*-tests and Pearson's Chi Square analyses were conducted on the baseline data to identify any differences on the demographic variables. Parents were well matched with no significant differences on measures of: parent's age, infant's age, infant gender, target child's birth order in the family, single parents, young mothers and the mothers' hazard awareness scores. The overall SED6 scores were also equivalent in both groups (control *M*=1.71, SD=1.49 and IYPB *M*=2.08, SD=1.38). Therefore, we conclude that the intervention and control groups are similar.

Parent's self-reported mental wellbeing at baseline in both groups suggested that the sample was generally functioning well. The WEMWBS score mean (*M*= 52.95, SD=7.82) was higher than the population mean of 50.7. Baseline values of 42.6 (SD= 9.4) (Family Links; Grant, 2012), 43.5 (SD= 10.4) (PEIP, Lindsey et al., 2008) and 43.37(SD=10.18) (Griffith, 2011; IY Toddler evaluation) have been recorded for at risk families referred for

interventions. The KPCS baseline mean scores reported in the original manual by the developers (2008) is 36 for an at risk population (and these parents reported an overall group increase to 39 after a five-day residential programme for parents and children with difficulties). The baseline score for the present sample was high (*M*= 40.87, SD= 3.29) again suggesting that this was a well functioning sample at baseline. Baseline parental self-efficacy (KPCS) scores were positively related to baseline mothers' self-reported mental well-being (WEMWBS), $r(62)=.59$, $p=.001$. The percentage correctly identified hazards were also very high at the baseline *M*=70.59%, SD=12.04)

Interrelationships Between Main Target Variables at Baseline and Follow up

This study was not randomised as participants were recruited consecutively with earlier participants allocated to the IYPB groups and subsequent participants were wait-list control families who were offered the IY toddler programme after the six month follow-up assessment had been completed. Analysis is based on participants that provided full data sets at both time points (*N*=63). The relation between baseline and follow up measures were assessed for the whole sample by using Pearson product moment correlations. Notable findings are reported; a full breakdown of the correlational analysis is available upon request.

As with baseline scores, at follow-up the KPCS and WEMWBS scores again being significantly related, $r(62)=.62$, $p=.001$. Theoretically, we would expect self-efficacy and well-being to covary together because they are both hallmarks of a good mental health status.

Baseline Griffiths GQ global scores were unrelated to any other baseline measures, but follow-up scores were weakly related to follow-up KPCS scores, $r(62)=.27$, $p=.035$. A six month follow up may not been sufficient to allow for significant relationships with maternal and environmental variables in this study.

In line with predictions, baseline PIPOc global scores[4] were positively related to baseline IT Home global scores, $r(62)=.53$, $p=.001$. Similarly, follow up PIPOc global and IT Home global scores were also positively related, $r(62)=.29$, $p=.021$. A degree of overlap was expected between the scores for these two instruments at baseline and follow up because they

[4] Global scores for the PIPOc were produced by summing the values for the three sub-variables (Sensitive, Physical Encouragement and Verbal Encouragement).

measure similar constructs. However, the instruments still had a good degree of independence and measured different aspects of positive parent-child dyadic interactions.

Changes Across the Sample Over Time

To identify if there were any significant changes across the whole sample over time, paired samples *t*-tests were run on the main target variables. Significant increases in Griffiths GQ, I-T Home, PIPOc Global and Verbal Engagement scores were identified. However, no significant changes were identified in KPCS, WEMWBS, PIPOc Physical Encouragement and Sensitive Parenting scores across the sample (see Table 5.2.).

Table 5.2.

Overall Mean Scores at Baseline and Follow Up. (*N*=63)

Variable	**Baseline**			***Follow up***						
	Mean (SD)	*Skewness (SE)*	*Kurtosis (SE)*	*Mean (SD)*	*Skewness (SE)*	*Kurtosis (SE)*	*t*	*p*	*95% CI*	*d*
KPCS	40.87 (3.29)			41.54 (3.14)			1.71	.094	-1.45 to .117	0.21
WEMWBS	52.95 (7.82)	-.42 (.30)	.46 (.60)	52.49 (8.39)	.30 (.30)	-.06 (.60)	0.49	.627	-1.43 to 2.35	-0.06
Griffiths GQ	101.94 (10.64)	-.06 (.30)	.12 (.30)	109.74 (11.35)	.12 (.30)	-.25 (.60)	4.42	.001*	-11.34 to -4.27	0.71
I-T Home	23.27 (3.82)	-.70 (.30)	-.40 (.60)	27.03 (3.34)	-.70 (.30)	-.35 (.60)	7.61	.001*	-4.73 to -2.76	1.05
PIPOc Global	99.84 (26.04)	.27 (.30)	-.50 (.60)	111.50 (22.81)	-.47 (.30)	.18 (.60)	4.12	.001*	-20.75 to -7.19	0.51
PIPOc Physical Encouragement	40.31 (15.31)	.04 (.30)	-.53 (.60)	39.06 (12.18)	-.30 (.30)	.04 (.60)	0.17	.869	-4.47 to 5.25	-0.03
PIPOc Verbal Engagement	41.89 (14.47)	.20 (.30)	.35 (.60)	55.85 (16.26)	-.42 (.30)	-.70 (.60)	5.95	.001*	-20.63 to -10.25	0.87
PIPOc Sensitive Parenting	17.65 (10.04)	.66 (.30)	-.33 (.60)	16.58 (9.42)	1.11 (.30)	1.34 (.60)	0.63	.530	-2.31 to 4.43	-0.11

Groups Analyses of Main Target Variables

Due to the exploratory nature of the study within-group pretest-postest analyses of the main measures were undertaken with paired samples *t*-tests to assess whether there was a significant change over time within each group. To reduce Family Wise and Type 1 errors tests were run on the global scores for each measure independently. The distributions of the main outcomes have been reported in the revised table 5.2 and the Skew and Kurtosis values for each outcome variable at baseline and follow up reported.

A small violation of normality on the Kurtosis values at follow up observed PIPOc Sensitive variables was present, however this did not have a major effect on the direction of the results. These scores are a true reflection on the observed behaviours coded independently from the videos. Changes over time within both groups were seen using the t test reported in the thesis and two way anova was decided to be to insensitive to change.

The differences on the target variable scores from baseline to follow up for each group are presented and summarised in Table 5.3.

The control group reported significant increases in KPCS scores from baseline (*M*=40.75, *SD*=3.14) to follow up (*M*=41.79, *SD*=2.73), *t*(23)=2.11, *p*=.046 (*d*=0.35). However, no significant changes in KPCS scores from baseline (*M*= 40.95, *SD*=3.41) to follow up (*M*=41.38, *SD*=3.38) were identified in the IYPB group, *t*(38)=0.78, *p*=.439. However, both groups were exhibiting ceiling effects on this measure of self-efficacy at baseline because the maximum score that could be obtained on this measure is 45.

Neither the control nor IYPB group showed any changes in WEMWBS scores from baseline (control group *M*=49.63, *SD*=7.13; IYPB group *M*=55.00, *SD*=7.61) to follow up (control group *M*=51.38, *SD*=7.99; IYPB group *M*=53.18, *SD*=8.66), *p*>.05. The failure to find any significant changes in WEMWBS scores from baseline to follow up may be because both groups demonstrated high baseline scores on this measure.

Both groups group showed significant changes in Griffiths GQ scores from baseline, control (*M*= 101.79, *SD*=10.77) to follow up (*M*=108.13, *SD*=11.79), *t*(24)=2.11, *p*=.046 (*d*=0.56), intervention (*M*=102.03, *SD*=10.70) to follow up (*M*=110.76, *SD*=11.12), *t*(37)=3.98, *p*=.001 (*d*=0.77). These results may reflect improved developmental outcome or familiarisation with the experimenter and the task or more accurate assessment as the baby develops offering more items for assessment.

Control group participants showed significant improvements in IT HOME global scores from baseline (*M*=25.13, *SD*=3.11) to follow up (*M*=27.04, *SD*=3.09), *t*(23)=3.09, *p*=.005 effect size (*d*=0.35). This was also shown in the IYPB group, with significant

increases from baseline (*M*=22.15, *SD*=3.81) to follow up (*M*=27.03, *SD*=3.52), *t*(38)=7.63, *p*=.001 with a very large effect size (*d*=1.33).

The PIPOc demonstrated increases in global parent-child interactions from baseline to follow-up irrespective of treatment condition; control baseline (*M*=106.54, *SD*=24.33) and follow-up (*M*=117.79, *SD*=21.24), *t*(23)=2.22, *p*=.037, *d*=0.49), intervention baseline (*M*=95.61, *SD*=26.50) and follow up (*M*=111.29, *SD*=32.94), *t*(37)=3.46, *p*=.001, *d*=0.53.

Both groups showed significant increases in PIPOc Verbal Engagement scores from baseline to follow-up in control condition (*M*= 43.13, SD= 10.66 to *M*= 60.63, SD=15.70), *t*(23)=4.74, *p*=.001 (*d*=1.33), and in intervention condition (*M*=41.11, *SD*=16.52 to *M*=55.24, *SD*=23.69), *t*(38)=3.98, *p*=.001 (*d*=0.70).

The IYPB group showed no significant changes in PIPOc Sensitive Parenting scores from baseline (*M*=15.37, SD=9.69) to follow-up (*M*=18.53, SD=10.33), *p*=.125. However, the controls were found to show a significant decrease in PIPOc Sensitive scores from baseline (*M*=21.25, SD=9.72) to follow-up (*M*=13.50, SD=6.90), *t*(23)=3.17, *p*=.004 (*d*= -0.93).

Lastly, neither group showed any significant changes in PIPOc Physical Encouragement scores from baseline (Control *M*=42.17, SD=15.95 and IYPB *M*=39.13, SD=14.98) to follow-up (Control *M*=43.67, SD=12.56 and IYPB *M*=37.53, SD=14.25), *p*>.05.

Table 5.3.
Within-Group Differences for Main Target Variables.

Variable	**IYPB (*n*=39)**					
	Pre Mean (SD)	*Post Mean (SD)*	*t*	*p*	*95% CI*	*d*
KPCS	40.95 (3.41)	41.38 (3.38)	0.78	.439	-1.56 to 0.69	0.13
WEMWBS	55.00 (7.61)	53.18 (8.66)	1.46	.154	-0.71 to 4.35	-0.22
Griffiths GQ	102.03 (10.70)	110.76 (11.12)	3.98	.001*	-13.18 to -4.24	0.77
I-T Home	22.15 (3.81)	27.03 (3.52)	7.63	.001*	-6.17 to -3.58	1.33
PIPOc global	95.61 (26.50)	111.29 (32.94)	3.46	.001*	-24.88 to -6.49	0.53
PIPOc Physical	39.13 (14.98)	37.53 (14.25)	0.51	.612	-4.71 to 7.97	-0.11
PIPOc Verbal	41.11 (16.52)	55.24 (23.69)	3.98	.001*	-21.33 to -6.93	0.70
PIPOc Sensitive	15.37 (9.69)	18.53 (10.33)	1.57	.125	-7.23 to 0.91	0.32
Variable	**Control (*n*=24)**					
	Pre Mean (SD)	*Post Mean (SD)*	*t*	*p*	*95% CI*	*d*
KPCS	40.75 (3.14)	41.79 (2.73)	2.11	.046*	-2.07 to -.019	0.35
WEMWBS	49.63 (7.13)	51.38 (7.99)	1.32	.199	-4.49 to 0.99	0.23
Griffiths GQ	101.79 (10.77)	108.13 (11.79)	2.11	.046*	-12.54 to -.124	0.56
I-T Home	25.13 (3.11)	27.04 (3.09)	3.09	.005*	-3.19 to -.635	0.35
PIPOc global	106.54 (24.33)	117.79 (21.24)	2.22	.037*	-21.74 to -.754	0.49
PIPOc Physical	42.17 (15.95)	43.67 (12.56)	0.38	.705	9.60 to 6.60	0.32
PIPOc Verbal	43.13 (10.66)	60.63 (15.70)	4.74	.001*	-25.14 to -9.86	1.33
PIPOc Sensitive	21.25 (9.72)	13.50 (6.90)	3.17	.004*	2.68 to 12.81	-0.93

Note: * = Significant change in scores from baseline (pre) to follow-up (post).

ANCOVA Models for PIPOc Sub-Variable Scores

Because of the within group differences stated above we decided to use an ANCOVA model instead of a full factorial repeated measures ANOVA model; we also considered that an ANOVA model would not be robust enough to detect any significant treatment effects within a small-*N* pilot study.

Preliminary Tests

Several variables were excluded as covariates from the ANCOVA analyses because they were found to have no overall effect on the direction of the results, as follows. This evaluation was targeted at mothers living on a low income and 85% of the sample reported an income less than 60% of the national Welsh median income (Household Statistics department [WG], 2012). However, there were no difference between outcomes of mothers that reported living in poverty and mothers that stated that they had a greater income and the elimination of tax credits did not account for the families' full income to be compared to other measures that only eliminate housing costs from the household income. Whether the mothers were single or had their first child as a teenager were also found to have no overall effect on the direction of the results.

Parental scores for our Safety Awareness measure were found to be very high at the outset and did not improve over time (probably due to ceiling effects) in either group. IYPB group baseline (*M*=71.49%, SD=11.79) with a non-significant decrease at follow-up (*M*=70.10%, SD=12.66), and the control group at baseline (*M*=69.17, SD=13.26) with a non-significant increase at follow-up (M=73.54%, SD= 8.70), $p>.05$.

ANCOVA Tests

The effects of the baseline PIPOc sub-variable scores were included as covariates in the ANCOVA models; this allowed for any changes in the follow-up scores that were due to the treatment to be elucidated. In total, three ANCOVAs were run on the three PIPOc sub-variables. The dummy coded dichotomous treatment condition variable was included in all models as a fixed factor.

The first two models showed no main effect for treatment condition on PIPOc Physical Encouragement and Verbal Engagement sub-variable follow up scores after controlling for baseline scores with both subscales showing an overall improvement for both groups. However, the final model for the PIPOc Sensitive Parenting sub-variable did show a main effect for treatment condition after controlling for the baseline covariate score, $F(1,59)=5.66$, $p=.021$, partial eta-squared=.088. The IYPB group (*M*=18.87, *SE*=1.51; 95% CI =15.86 to 21.88) were found to score significantly higher at follow-up than the control

group (*M*=12.96, *SE*=1.91; 95% CI = 9.13 to 16.79), a mean difference of 5.91 (*SE*= 2.48; 95% CI =.942 to 10.88). We can therefore conclude that IYPB intervention appears to have been effective in increasing mothers' Sensitive Parenting scores whilst the control parents observed sensitivity from T1 to T2.

Discussion

At the outset, based on existing literature and the stated aims of the IYPB programme, we predicted that mothers attending this group-based intervention would interact more positively and encourage their babies' development. Thus IYPB group leaders encouraged mothers to observe their babies and modelled how to respond appropriately to their babies' cues. It seems likely that this was effective, as we found that the IYPB intervention increased mothers' Sensitive Parenting PIPOc scores relative to the control group which showed a significant decline. The size of this improvement in maternal sensitivity was comparable to the effect sizes reported in Bakermans-Kranenburg et al. (2003) review of RCT intervention effects on maternal sensitivity (Cohen's *d*= 0.33).

The other two positive parenting factors, Physical Encouragement and Verbal Engagement, as well as global PIPOc scores, increased in both intervention and control groups with no significant difference observed between the two groups. It is possible that in these early months of the babies' lives, mothers changed their behaviours as the babies became more alert, and that this is a natural change in mother-baby interactions as shown by the longitudinal analysis of maternal responsiveness by Bornstein, Tamis-LeMonda, Hahn and Haynes (2008). Further research with a larger sample would be needed to confirm this shift in parenting behaviour to coincide with infant development. Overall, the present results show that PIPOc, developed especially for this evaluation, was capable of detecting changes in the parenting patterns in the first year of life, irrespective of the condition.

The increase in observed maternal sensitivity was not evident in the rating of maternal warmth by the researcher using the HOME subscale. Although we found the expected correlation between the PIPOc global scores and IT Home measure, the latter measure was possibly less sensitive to change in the mothers' interactions with their babies. This finding

is consistent with the literature that promotes the use of direct observational measures over indirect records of behaviour (Aspland & Gardner, 2003), and provides another justification for the development and use of PIPOc in this research (see Chapter 4).

The mothers' self-reported self-efficacy scores (KPCS) did not differ between the two groups. The group means of the total scores were higher than the mean scores reported by the developers (Črnčec et al., 2008; Kohlhoff & Barnett, 2013) meaning that parents' self-efficacy of the present sample was high at the outset of the study. Similarly, baseline mental well-being scores (WEMWBS) were higher than in twelve other reported studies that have used this measure in other interventions (Maheswaran, Weish, Powell & Stewart-Brown, 2012). The Pathfinder report (Lindsey et al., 2008) compared three parenting programmes for parents of children 8 to 13 years of age (n=3575) with baseline WEMWBS means of 43.6 (SD= 10.4) and follow ups reported at 50.6 (SD=9.8). Two other evaluations involved parents and young children; The Family Links study (n=263) used the scale to evaluate a parenting programme for parents of 6 year old children with parent baseline scores of 42.38 and post intervention scores of 49.47 (Grant, 2012) and the IY Toddler evaluation (Griffith, 2011) reported significant improvement in the intervention parents scores compared to controls. Follow up scores for intervention parents were 50.95 (SD= 8.61) and controls mean totals were 47.83 (SD= 10.41). The control means matched population means at the outset, suggesting that mothers who consented to the present study were already confident in their parenting abilities and therefore not necessarily representative of mothers living in poverty in general who tend to report high levels of mental health problems. It is possible that scores were higher than expected because of the many sources of support that have been made available to parents in this area (targeted by several Government early years initiatives and programmes). Another possible reason may be the definition of weekly income in this study. Parents were asked about their weekly disposable income and the sample recruited appears to be less disadvantaged than anticipated. Future research should consider recruiting parents that may be at higher risk of poor outcomes, as seen in other parenting groups (see Chapter 2).

There were no significant changes that could be attributed to the intervention on development of the babies assessed using the Griffiths Mental Development Scale. Niccols

(2008) proposed a sleeper effect in which interventions report initial changes in parental behaviour that only become mirrored by changes in the children's behaviour at a later stage.

The present results have higher ecological validity than lab-based research, since all the data was collected in the home and the researcher was experienced in creating the rapport with parents in her wider community. Although the researcher (first author) who was interviewing and assessing the families was not blind to their allocated condition, the main statistically significant improvement in parenting was detected through PIPOc, which used independent blind coding of the maternal behaviours.

The mothers were all biological mothers, Caucasian and living in rural areas of Wales. Therefore the present results cannot be generalised without further replication in urban and multi-cultural samples although other IY programmes have been shown to be equally effective with parents from different cultural backgrounds (Reid et al., 2003). At present, we do not know whether the IYPB intervention would be effective with fathers or other carers.

Despite the practical and financial constraints within the present research (a PhD study) that precluded a randomised design, the intervention and control groups were well matched on the key demographic and outcome measures as were parents who were initially recruited but failed to enrol on a course.

The present results may underestimate the effectiveness of the IYPB intervention because most of the mothers in the intervention group had group leaders that were delivering the programme for the first time. Future evaluations with leaders that had more experience in the programme delivery would be needed to extend the present results to establish whether, as would be anticipated, experience of running the programme resulted in better outcomes.

Conclusion

The IYPB intervention evaluated in the present paper was well received, moderately priced, had good attendance rates and received positive feedback from mothers and group leaders (see Jones et al., 2012; Chapter 6). The present results suggest that the programme successfully enabled mothers to show more sensitivity to their babies' needs whilst control parents reduced in sensitivity over the same time period. These preliminary findings are

encouraging, but more research is needed to establish whether funding training to support parenting workers to deliver the programme in Welsh communities is a good investment for the future. A larger RCT with mothers at increased risks for poor outcomes would be justified. This would further increase our understanding of the value of primary preventative parenting interventions delivered to families in the first year of their child's life.

CHAPTER 6

STUDY 4

PARENT AND GROUP LEADER FEEDBACK AND COSTS FROM A PROGRAMME FOR PARENTS AND BABIES

5

[5] This chapter presents the fourth Thesis paper. This chapter has been published.
Jones, C.H., Hutchings, J, Erjavec, M.E. and Hughes, J.C. (2012). Parent and Group Leader Feedback and Costs from a Programme for Parents and Babies, *Community Practitioner, 85*(11), 26-29.

Abstract

There is growing interest in supporting families during children's early years to encourage optimal infant development. The data were collected from an evaluation of the Incredible Years (IY) eight-week parenting group for parents and their babies. Feedback obtained from parents (*n*= 34) and leaders (*n*= 13) was positive. Retention and attendance rates were high. A detailed costing for the groups indicated that this programme can be delivered for a reasonable cost to meet health visitor objectives with families in the first postpartum months and provides an opportunity to inform parents about resources and other support available for them and their infants.

Introduction

There is increasing interest in evidence-based early intervention programmes that aim to establish firm foundations for positive parent-infant relationships and encourage child development. A recent government-commissioned report on Early Intervention stated that "What parents do is more important than who they are" (Allen. 2011, p. xiv). The report emphasised the importance of investing support for families at disadvantage at an early age before behavioural and social problems become entrenched and more expensive to tackle. A longitudinal evaluation of individual family interventions with parents and babies (Olds et al., 1998) has shown substantial reductions in welfare and criminal justice expenditures, higher tax revenues in addition to improved physical and mental health. However, the high staffing costs associated with intensive individual home visiting programmes may still be prohibitive in terms of a preventative strategy for all high-risk children. An alternative method of support may be attending a group-based parenting programme.

The Incredible Years (IY) programmes for parents of pre-school and school aged children (aged 3 to 12) have good evidence for reducing conduct disorder behaviour in children and increasing the use of effective parenting strategies (Hutchings et al., 2004, Webster-Stratton., 2011). IY parenting programmes use DVD based modelling and group practice to encourage effective parenting skills. The programme emphasises the importance

of parents and leaders to working collaboratively to recognise important principles demonstrated in the programme DVD clips.

New IY programmes for parents of toddlers and babies were recently developed in Seattle (Webster-Stratton., 2008). The twelve-week Toddler parenting programme has been the subject of a Welsh Government (WG) funded separate evaluation (see Griffith. 2011). The WG has also funded training for 475 leaders across Wales to deliver the IYPB programme. The eight-week programme discusses appropriate stimulation and aims to increase parental sensitivity to their babies' cues, encourage the development of parent support networks and highlight safety issues. Parents and their babies meet weekly with two trained leaders for two-hour sessions. Updates on their infants' activities and development are shared in a safe and supportive environment. Parents are encouraged to implement the programme strategies in their daily activities at home. If parents miss meetings, leaders try to visit or call them to update them and encourage their continued participation in the group. Weekly phone calls to the parents provide an opportunity for leaders to support parents. Parental participation is also rewarded with token gifts and a shared meal/snack at each meeting. Leaders follow a detailed manual with weekly process checklist to ensure the programme is delivered with fidelity in accordance with the programme developer.

Parenting Groups – Existing Cost Evaluations

A recent review by Charles, Bywater and Edwards (2011) concluded there is a paucity of research on the cost effectiveness of parenting programmes tackling conduct disorder in children. Reviews based on programmes for parents with older children report variable delivery costs per child from £629 to £3,893 (Dretzke et al., 2005), £282 to £1,486 (Bonin et al., 2011) and Edwards et al. (2007) reported that the 12-week Basic IY programme delivered to eight families cost £1,595 per family.

The information on the costs savings of providing parenting support for parents of babies is limited. McIntosh, Barlow, Davis and Stewart-Brown (2009) reported that individual home visiting of parents and their infants by HVs trained to deliver a programme to improve parenting cost £3,874 per intervention family compared to the societal cost of £7,120 from control families. The Elmira Prenatal/Early Infancy project involved first time mothers receiving 32 home visits during the late pregnancy and first two years with long-

term benefits for 'high risk' families (unmarried, low socio economic status and/or mothers that were younger than 19). The intervention families reported reduced maternal criminal activity and behaviour impairments, fewer subsequent pregnancies and 33% less months receiving welfare benefits; the children also had fewer arrests by their 15 year follow-up, contributing to overall savings four times the cost of the programme (Karoly et al., 1998; Olds et al., 1998). Research by Cunningham et al. (1995) compared the cost of providing individual/clinic based and large community based parent training programmes. The group format became cost-efficient relative to individual therapy once group sizes exceeded three families.

Study Purpose and Scope

The purpose of this paper is to report on the experiences of parents and leaders involved in the IY Parents and Babies programme in North and Mid- Wales. The cost evaluation should give the services considering offering the programme an understanding of the required commitment in time and costs involved in leaders that have been trained on certified courses delivering the programme with fidelity to the IY Parents and Babies programme.

Method

Ethical Approval

The evaluation received ethical approval by Bangor University School of Psychology and NHS Research Ethics Committee (REC) (ref: 10/WNo01/40).

Recruiting Services and Parents

Service managers in North and Mid Wales were contacted to explain the research plan, gather information on birth rates and planned service delivery. Managers who committed to delivering the infant programme within their area, and agreed to release at least one of the group leaders to attend weekly supervision, were invited to be part of the evaluation. Further meetings were arranged to brief group leaders in each area to explain the inclusion criteria and research process.

HVs and other group leaders referred parents for the trial using the study inclusion criteria; parents had infants younger than 26 weeks (mean age at baseline = 12.27 weeks, SD= 4.96) and were considered to be living in poverty based on weekly income after housing cost, working tax and family tax credits were deducted. .

The first author conducted home visits to interested parents to explain the study and gain informed consent. A summary of the demographic characteristics of all intervention parents is presented in Table 6.1. The mean maternal age was 26.38 years (SD= 6.23); 20 (50%) were first time parents and 29 (72.5%) of the mothers lived with the babies' father at baseline.

Table 6.1

Summary demographic characteristics of parents that attended the intervention

Baseline parent demographics (n= 40)

Demographic data	Numbers of families (SD)	%
Index infant age weeks	*M*= 12.27, (4.96)	
Sex of index child	Male 19	47.5
Birth order	First born 20	50
Parent age at first birth	*M*= 22.58, (5.80)	
Teen pregnancy	16	17.5
Parent age at baseline	*M*= 26.38, (6.23)	
Relationship status	Single/Living apart 11	27.5
	Cohabit/married 29	72.5
Household in poverty	Yes 35	85
Working household	Neither parent 9	22.5
	One parent 10	25.0
	Both in work 21	52.5

This paper reports on families that attended the IY Babies and Parents programme. The Parent feedback was obtained using an end of programme parent questionnaire included

in the IY manual (*n*=34); the results are summarised in Tables 6.2 and 6.3. Group leaders that attended the last weekly supervision also completed an end of programme feedback form (*n*=11) and discussed the experience in a focus group (*n*=13) led by the first author. Leaders were asked a series of open questions and discussions of their experiences were recorded on the flipchart by the first author. The questions used in the focus group related to the leaders' overall impressions, perceived benefits of providing the group, any specific difficulties and suggested improvements to the programme. Finally, leaders were asked to complete detailed costing diaries. This paper reports on the data from five of the nine groups in which both leaders submitted a cost diary (*n*=10 leaders; see Table 6.4 for details).

Group Delivery Method

Nine Parents and Babies groups were delivered between September 2010 and March 2011 with a total of 17 different group leaders working in pairs (one leader delivered two groups). The leaders were mainly HVs; other leaders were family centre managers, specialist behaviour practitioners, parenting workers, educational and clinical psychologists. The majority of the leaders (*n*= 14, 82%) were delivering the programme for the first time and five (29%) had not delivered any IY parent programmes prior to this study.

Group locations for meetings varied from well-resourced family centres (5), clinic rooms (2), and community halls (2). Family centres had the advantage of on-site equipment and facilities for parents and their infants within the building. Clinics and halls required leaders to transport the programme and associated equipment for the babies to the venue each week. Room hire arrangements also influenced the scope for informal gathering before/after the group for a meal/ snack. Overall the groups spent £21.27 per family on refreshments during the programme.

Supervision

Weekly supervision was provided by IY accredited mentors to support the leaders to deliver the programme with high degree of fidelity. Recordings of previous group sessions were reviewed and leaders planned the following group session. The first author also recorded the main issues discussed by each group at the weekly supervisory meetings.

Results

Parental Attendance at the Groups

Following baseline visits, 14 parents (26%) who were offered a place on the programme decided not to attend. A telephone survey of these parents yielded the following reasons: illness (4), return to work (3), family issues (2), lack of child care for older sibling (1), move (1), transport (1), clash with other group (1) and no response (1). These parents were thanked for their involvement and interest and released from further follow-ups. Of the remaining 40 that attended the Babies programme, the retention rate was high with 34 (85%) attending six or more sessions (75% of the programme) and receiving IY certificates for successful completion of the programme. The mean attendance was high at 6.85 sessions (SD= 1.86).

Parent Feedback

Table 6.2 demonstrates the level of satisfaction from parents recorded on a seven point Likert scale (*N*= 34). Parents were asked a series of questions about their overall impression of the programme, the teaching format, which part of the programme was most helpful, what they liked or disliked most about the programme and any suggestions for improvements (see Table 6.3). Parents enjoyed learning how to encourage their babies' developments (35.29%), group discussions (29.41%) and meeting other mothers (20.59%). One parent said that before attending the group she felt suicidal, but valued herself as a mum after the group and that it had given her the confidence to join a training programme. Parents also reported developing effective routines and learning coping strategies as they attended the group.

Table 6.2
Parent responses to open questions on the end of programme questionnaire (n= 34)

Questionnaire statements	Parent responses	%
What part of the programme was most helpful	Information on Baby's development 12	35.3
	Group discussions 10	29.4
	Social aspect 7	20.6
	All of the programme 5	14.7
What did you like most about the programme	Social interaction 13	38.2
	Developing new skills 8	23.5
	Support from group/ leaders 8	23.5
	Everything	14.7
What did you like the least about the programme	DVD clips 6	17.7
	Paperwork 2	5.9
	Nothing 12	35.3
	Blank section 12	35.3
	Unrealistic expectations 1	2.9
	Journey to group 1	2.9
How could the programme be improved o help you more	Longer programme 6	17.7
	Started at a young age 1	2.9
	Number hand-outs 1	2.9
	Updated videos 1	2.9
	Better chairs 1	2.9
	Examples of mother sharing time between children 1	2.9
	Could not be improved 7	20.6
	No comments 15	44.1

Table 6.3

Parents' positive responses on the end of programme questionnaire (n= 34 programme completers).

Related outcomes	Positive responses %
Maternal items	
The bonding mothers felt with their baby since taking this programme had improved	88.2
The mothers confidence in parenting after the programme	100
Mothers confidence in ability to implement the skills gained from the programme with future problems	97.1
Mothers overall feeling of achieving personal goals from the programme	94.1
Infant items	
Mothers statements of their baby's bonding with them using the methods in the programme had improved	91.2
Mothers satisfaction with their baby's social, emotional and physical development	97.1
Relationships	
The programme had helped with personal and family problems	88.2
Programme	
Overall expectations of good results from the programme	85.3
The content of the information presented	94.1
The mothers would recommend the programme to family/ friends	97.1

Group Leader Feedback

The programme was rated positively with overwhelming majority (72.7%) of the leaders very likely and 27.3% of the leaders likely to deliver the groups in the future. One leader described the programme as the "bread and butter of health visiting".

Group leaders described delivering the programme as a rewarding and very enjoyable part of their work. They saw positive changes in parental skills and the development of attachment between parents and infants during the programme. One leader commented that, irrespective of family difficulties, by the end of the programme mothers were observing their babies more. The collaborative format enabled leaders to build trusting relationships with parents and ensure that issues such as safety could be discussed in a supportive environment. Leaders stated that parents showed increased confidence and expanded social networks with reports of mothers meeting outside of the group.

Some groups invited other agencies such as bilingual promotion officers and language and play workers to join the group for the appropriate section of the programme (*n*=4). Book bags, treasure baskets, portion guides, toothbrushes and baby-led weaning information were shared within the groups (*n*=6) and leaders (*n*=2) also sign-posted parents to other activities.

The group leaders (*n*=11) stated that the weekly supervision meetings were either helpful or very helpful. Overall one issue was shared and problem solved at each supervisory meeting. Issues included dealing with negative or off-task members, how to encourage an inclusive group environment, striving for a balance between delivering the programme content and encouraging parents to observe and practice skills with their infants in the group setting (when the infants were awake). Some leaders (*n*=5) suggested changing the format to introduce infant developmental milestones before weaning and others (*n*=5) described the last session as repetitive.

Challenges

Some leaders (*n*=4, 36%) reported having difficulty in getting members to join the group. This may have been due to the programme being new to the leaders and parents. The method of recruiting families varied according to location. HVs that contacted families during pregnancy (*N*= 2 groups) were able to recruit and more importantly retain interested parents, whilst those that relied on referrals from colleagues in neighbouring areas lacked vital information required for planning adequate resources for the interested parents.

The amount of time leaders reported on visits and preparation before the first meeting varied considerably between the five groups (*M* =10.80 hours, SD= 6.72). The two groups with the least amount of invested time specifically by the group leaders before the groups started (three and five hours collectively per group) had the highest drop out of parents that agreed to attend (24.43% and 35%). Overall, the hours spent collectively by both group leaders before the groups' first meeting correlated highly with the mean attendance in their group (*r*=.80), but this failed to reach statistical significance (*p*=.104), probably due to small sample size (5 groups).

Some HVs (*n*= 5) saw the group as an efficient use of their time as they were establishing a weekly contact within the group environments. However, group leaders (*n*= 8) stated that they felt that lack of time within their current workload was a barrier to delivering the programme. They commented that the preparation and assignment feedback to parents was completed in their own time.

Technical difficulties with unfamiliar equipment used to deliver the DVDs were reported by six of the nine groups and this also serves to highlight the need for leaders to have time to plan and learn about equipment prior to starting the group.

Cost Evaluation

The leaders that submitted detailed costs include seven HVs, one family centre manager, one specialist behaviour practitioner and one parenting worker (mean annual salary =£28,427, SD= 6.71). Across all nine groups the mean annual salary was £31,158 (SD= 7.98).

The costs reported in this paper also include an additional 50% on top of the mean salary for the group leaders to account for additional costs of employment (pension, employers NI and other general overheads, as was used in the evaluation by Edwards et al., 2007).

The costs are listed in Table 6.4, presented in three sections

(i) Non-recurrent /set up costs associated with training two leaders and purchasing the programme materials.

(ii) Cost associated with recruiting parents to the group and delivering the eight-week programme.

(iii) Costs associated with leaders attending weekly supervision.

Table 6.4

Costing data Programme set up costs

Non-recurrent (set up) *-purchase of programme and initial leader training*			
	Mean (SD) unit cost (£)	Mean (SD) units	Total cost (£)/group
Materials (programme kit)	976.00	1	976
Initial group leader training:			
Training course fee	350 per leader	2	700.00
Time at training course for two leaders	808.48 per leader	16 hours/leader	1,616.96
Return travel to training course	40.14 per leader	1.59 (1.11) hours	80.28
	0.39/mile	58.8 (32.35)	45.86
Set up subtotal			3419.10

Table 6.5

Costing data Programme delivery

	Mean (SD) unit cost (£)	Mean (SD) units	Total cost (£)/group
Basic recruitment and group delivery costs			
Recruitment of parents by visits	25.27 (5.96)/hour	2.6 (3.17)	131.38
Group leaders recruitment home visits	25.27 (5.96)/hour	0.42 (0.73)	21.22
Phone calls before groups starts	25.27 (5.96)/hour	0.61 (0.81)	30.32
Admin before groups starts	25.27 (5.96)/hour	1.65 (1.80)	83.38
Raffle prizes	£1/parent and infant	16	16.00
Time for group leaders setting up the room	25.27 (5.96)/hour	1.01 (0.55)	408.29
Time group leaders planning session	25.27 (5.96)/hour	1.95 (1.36)	788.28
Refreshments for parents attending group			136.80 (48.80)
Time for two group leaders /weekly session	25.27 (5.96)/hour	2.30 (0.40)	929.76
Contact with parents that missed session	25.27 (5.96)/hour	0.41 (0.44)	163.71
Travel to visit parent that missed session	25.27 (5.96)/hour	0.19 (0.20)	74.79
Additional costs (Venue hire, crèche for siblings, stationary)			64.00 (126.90)
Administration	25.27 (5.96)/hour	0.90 (0.80)	363.82
Subtotal of group delivery			2548.10

Research and supervision cost included in current study			
Set up day	25.27 (5.96)/hour	5 hours/1 leader/group	126.35
Travel to set up day	40.14 per leader	1.59 (1.11) hours	40.14
Prepare resources and parent hand-outs	12.30/hour	4.11hour	50.58
Trainer cost on set up day	62.50/hour	4	250
Weekly supervision trainer cost	62.50/hour	16	1000
Time at supervision	25.27 (5.96)/hour	(1 leader/group) 2 hours*8	404.32
Travel time to supervision	25.27 (5.96)/hour	1.59 (1.11) hours	321.12
Mileage to supervision	0.39/mile	58.8 (32.35) miles	183.46
Supervision subtotal cost			2,379.97
Attendance at groups		6.85 (1.86) (2-8 sessions)	

Cost of establishing and running a parenting group over eight weeks including programme set up costs	5,921.34
Cost/child based on 10/group	592.13
Cost/child based on 6/group	986.89
Cost of establishing and running a parenting group over eight weeks excluding set up costs	2,548.10
Cost/child based on 10/group	254.81
Cost/child based on 6/group	424.68
Cost of running a parenting group over eight weeks including set up and supervision costs	8,343.17
Cost/child based on 10/group	834.72
Cost/child based on 6/group	1,391.20

Based on a group of six parents attending with their infant, an initial group would cost £1,391.20 per parent. This includes the initial investments in purchasing the programme, training two leaders and allowing the leaders to attend supervision during the first group. This is comparable to other group-based parenting programmes (Dretzke et al., 2005; Edwards et al., 2007). As leaders become experienced in delivering the programme, locally based peer supervision would replace the need for leaders to invest additional time in traveling to receive supervision.

Subsequent groups with six parents could be delivered at a greatly reduced cost of £424.68 per parent as the programme materials could be used again and leaders would be familiar with the programme so external supervision could be replaced with in house peer group support. Leaders that recruited and delivered larger groups, based on the manual recommended size of 10 parents per group, would decrease the cost per parent to £834.72 at the first group and £254.81 for future groups.

Discussion

Leaders and parents were positive about the group experience. The cost evaluation suggests that this can be an efficient use of HV time in delivering services to parents on their caseload within the group and can integrate/promote efficient utilisation of other family services.

The results show the importance of investing time before the group starts in meeting potential families to explain the format for the groups, plan for any requirements as issues such as providing child-care for older pre-school siblings and timing the group to coincide with public transport.

Limitations

The feedback should be interpreted with some caution. Participant response bias may have increased the level of positive feedback from parents completing their end of programme questionnaires due to completing in the presence and handing them to the leaders. Missing feedback from parents (n= 6) and leaders (n = 4) was due to their absence at the last group session.

Another limitation is the small sample size in this study. All the groups were scheduled for the daytime and this may have limited the scope for some parents to attend; offering the programme in the evenings may have appealed to fathers as 70% in this study were in

employment. Larger studies with leaders that were more experienced in the programme would be needed to evaluate the programme further.

Conclusion

Leaders need to invest time in visiting potential families before the group starts to ensure sufficient attendance rates. Additional support in the form of supervision for newly trained leaders is important in ensuring the programme is delivered effectively. The cost of delivery compares very favourably with other interventions and we will shortly report further outcomes.

The programme was well received by the parents and leaders, enabling HVs and other group leaders to build relationships with families and meet families in a positive environment. The programme also has the potential to ensure more families benefit from the range of support available at this crucial period in their child's development.

Key points

- Parent feedback was very positive with 85.3% to 97.1% of parents responding positively on the end of programme evaluation. Parents stated that they had learnt new skills and particularly appreciated the support from the group format.
- Group leaders reported that delivering the programme was rewarding for them professionally and for the group members.
- The collaborative format facilitates leaders and parents to build trusting relationships and enabling issues to be discussed in a supportive environment.
- Service managers and group leaders need to allocate sufficient time for leaders to recruit and deliver the programme.
- The delivery of the IY group is a cost effective way of meeting HV goals and developing parental awareness of their babies' needs in the first year.

CHAPTER 7

GENERAL DISCUSSION

Study Objectives

Based on the evidence of benefits for parents of three to eight year old children after attending the IY Basic parenting programme the Welsh Government purchased the new IYPB and Toddler programme for each authority and funded staff training to deliver the programmes in Wales. The main objective of the current study was to evaluate the effectiveness of the new IYPB programme in a non-randomised controlled comparison trial. The intervention was delivered as part of the community based early years support for parents and their babies.

Thesis Findings

Primary preventative parenting programmes are a relatively new direction in parenting programmes in the UK although studies in the United States with shown significant long term benefits for families receiving individual home visiting support as they become a parent (Olds et al., 1998). The introduction of the IYPB in Wales provided an opportunity to evaluate a new group-based parenting programme delivered in the first year of a baby's life. The first study reviewed the existing evidence for group-based support to families in the first year. The second study involved the development and testing of an observational measure designed to evaluate the programmes impact on positive parenting behaviours. The third study involved an evaluation of the main outcomes comparing data collected from mothers and their babies that received the programme and comparison families. Finally, in the forth study, group leaders and intervention parent's feedback after the IYPB programme was reported and the cost involved in recruiting and delivering the programme to parents was presented as a guide for planning future programmes delivered in the community. The following section is a summary of the main findings from these four studies and the future implications of the findings.

Study 1: Systematic Review of Group-based Parenting Programmes

Parental support in the early years can have long-term benefits for individuals, families and society (Allen, 2011; Bakermans-Kranenburg et al., 2003; Barlow, McMillan et al., 2010). The longitudinal evidence from studies by Olds et al. (1998) has demonstrated benefits for both parents and children following two and a half years of structured home visits to first time parents. The existing reviews of parenting support have been focused on the effects of individual and group support for parents of older children and very little evidence is available for interventions for parents during their child's first year of life. The first study evaluated twelve group interventions which started before the child's first year. The results showed parenting skills were

increased with evidence of more positive affect and improved interactions between parent and child after attending the groups. However numerous methodological flaws were evident in many of the reported studies. Improved study design, and larger samples are required to substantiate these encouraging findings.

Study 2: Development of a Positive Parenting Observation Code

Following examination of existing observational measures and an assessment of the IYPB programme content, a new observation code, the PIPOc, was developed to measure targeted positive parenting behaviours. It was designed to provide a simple and reliable method of coding positive parenting behaviour recorded during a ten-minute play session in the child's home. A partial interval coding method was selected with six target behaviour categories observed in each ten-second interval and analysed away from the home. Factor analysis indicated that three main behaviour components remained stable across the two data collection visits six months apart. These components; Sensitive parenting, Physical encouragement and Verbal engagement, accounted for 69.48% of observed behaviours at baseline and 76.68% at follow-up. All three components included two different behaviours from the six target behaviours in the PIPOc. Testing of the code involved elimination of unsuitable behaviours and establishing intra- and inter-rater reliability. Concurrent validity was established by correlation with selected subscales from the IT HOME (Caldwell & Bradley, 2003). A coder manual was developed and a psychology graduate was successful trained in 27 hours to be the independent blind primary coder. Following training, 20% of randomly selected tapes were checked for inter-rater reliability to ensure the accuracy of the coding was maintained throughout the coding process. This study demonstrated that the PIPOc was an accurate and reliable observational code developed specifically to evaluate the positive parenting behaviours encouraged in the programme for parents with their babies in the first year. Further tests are needed to confirm and extend the results obtained to date.

Study 3: Six-Month Outcome Data

The third study reported the baseline sample descriptions and the main outcome data collected from the families during home visits at baseline and at six-months follow up. This was the first known evaluation of the IYPB programme and age appropriate measures suitable for parents and infants were selected. Positive parenting behaviour was the main outcome measure with additional outcome measures related to the home environment, parental confidence, mental

well being, hazard awareness and infant development. Analysis showed that parents that were allocated to the intervention and control conditions were well matched. The results from the PIPOc observational measure comparing baseline and six-month follow up data showed that both groups increased in their total positive interactions with their babies mainly contributed to by increases in the verbal engagement category. There was a significant decrease in control mothers' sensitive responding whilst the mothers which attended the IYPB programme showed a small increase in the sensitivity this suggests that the intervention had the desired effect of increasing parent's awareness of, and interaction with, their baby. The other measures showed an improvement in the home environment and infant developmental assessments over time in both groups. The study by Hindley (1960) evaluating the Griffiths scale on infants from 3 to 18 months of age stated that inter-correlations were higher in the later stages and with larger samples with a greater reliance on mothers testimony in the first assessment. The control parents self-reported level of self-efficacy showed a small yet significant increase and no significant changes were evident in the intervention parents or either group's mental well being. The baseline mean values for both these measures were higher than the mean general population values reported by their authors. The requirement for parents to opt in/self-select to the study appears to have resulted in parents with above average levels of mental well-being and confidence and infants that were showing good developmental scores and these factors reducing the scope for improvement in these areas following a brief intervention. The encouraging increase in sensitive parenting can facilitate a secure attachment, an important protective factor in children living in conditions of increased risk of poor outcomes.

Study 4: Feedback and Costs

The IY programme encourages weekly and end of programme feedback from parents. Group leaders kept records of the time required to set up and deliver the group, parental group attendance and components delivered. They also provided feedback at weekly supervision meetings. Attendance rates and feedback gathered from the nine groups were both very positive. The time spent by group leaders contacting the parents before the group started varied considerably and in some cases pre-group recruitment was undertaken by other staff. In times of public spending cutbacks and scarce resources there is a surprising lack of information related to the cost of delivering a group-based parenting programmes to parents and their babies. Individual support for new parents is expensive and the IYPB programme can be delivered at a relatively low cost. This study showed the programme was well received by both parents and valued by

leaders as a way of engaging parents with the support and resources available in their communities.

Relevance of Research Findings to Previous Literature

The main aim of the thesis was to evaluate whether the IY group-based parenting programme for parents of babies less than six months of age and living in socially disadvantaged communities. The first study included a review of previous evaluations with many involving group-based programmes targeted at parents suffering from depression or at increased risks related to young parents or living in temporary accommodation. The five year follow up in the PEEP study (Evangelou, 2005) showed that investing in early support showed a greater improvement in the children's development and although a recognised and well validated measure of infant development was used in our study a six month follow up period is too early to see any significant changes in the babies development.

The RCT evaluation of the IY Parent and Toddler programme reported significant improvements in parental mental well-being score (using the WEMWS) at follow up that were lower than those reported at baseline in this study. The increasing activity and demands of caring for a toddler may have influenced the lower baseline scores in the study by Griffith (2011), allowing greater scope for improvements after attending the programme. The high initial ratings for mental well being in this study produced a ceiling effect limiting the potential for improved well being after the group and suggesting that the targeted population was not at increased risk of poor outcomes. Earlier work by Gardner, Hutchings, Bywater and Whitaker (2010) has shown that poverty was not a mediator for poor outcomes and similarly the Hutchings, Griffith, Bywater, Williams, and Baker-Henningham (2013) paper showed that living in disadvantaged FS areas was not directly associated with levels of risk for families but that other factors such as maternal mental health problems or limited parenting skills were probably more important indicators of risk. Living in a high poverty area or even living in poverty was not on its own a risk indicator.

Irrespective of the apparent high level of confidence and well being reported by the parents in both groups (intervention and control) the IYPB programme was beneficial in increasing the intervention parents' sensitivity towards their baby, a skill that can only be of benefit as their relationship develops.

Present Research: Policy Implications

The considerable investment by the Welsh Government in tackling inequalities linked to poverty and supporting the early years provided an excellent platform for evaluating the programme in real world settings. The overall improvement in the home environment, positive parenting and verbal behaviours for both intervention and control families may be accounted for parents responding to changes in the infants' needs and abilities in a six month period of rapid development. This pilot evaluation provides limited support for the programme with its emphasis on developing parental observational and interactional skills with their baby. Similar improvements in maternal behaviour have been reported in other group-based parenting programmes such as the Mellow babies group (Puckering et al., 2010), RFTS (Niccols, 2009), PIPE (Mayers et al., 2008), M-ITG (Clark et al., 2008), PACES (Deutscher et al., 2006) and the Infant massage groups (Onozawa et al., 2001). The RFTS evaluation was offered as a universal programme and the researchers used two maternal sensitivity assessments during a two hour observation, Niccols (2008), states that HOME subscale was more sensitive to change compared to the 90 item maternal behaviour rating. Our results indicate the simple well defined PIPOc components were more sensitive to change in maternal sensitivity compared to the IT HOME. Improvement in the intervention mothers' sensitivity, whilst the control mothers were significantly less sensitive at follow up, is a small but encouraging finding supporting the WG investment in facilitating its delivery to families in Wales.

Present Research: Strengths

The successful evaluation was the result of excellent partnerships throughout the study and its evaluation within the communities across North- and Mid-Wales adds ecological validity to the results. A range of measures were selected and tested to evaluate the programmes potential impact on families. The development of a simple and reliable observation code to evaluate the positive parenting behaviours is an important contribution to the research. The excellent inter-rater reliability between the author and the primary coder, who was blind to the family's status in the study, also adds strength to the parental interaction data.

Parental retention after the first meeting and feedback from both the leaders and parents was very positive and the range of IY parenting programmes (baby, toddler, preschool basic, and school aged) provides an opportunity for parents to meet again to reinforce the important parenting principles and learn new skills as their children enter new developmental stages.

Present Research: Limitations

The funding only enabled one PhD student to recruit and collect data from the all the homes and time was also a limited resource as groups were delivered in two waves to enable leaders to join supervisory meetings whilst delivering the programme. Birth rates within the recruitment areas were low compared to inner cities and parents were allocated to group or control conditions on a first come first served basis. As the review by Bakermans-Kranenburg et al. (2003) suggests, an RCT would have been preferable but the constraints of funding and time did not allow for a more rigorous design.

The high group baseline mean scores for parent reported mental well being and confidence suggest that the opt in mechanism for recruiting families to the evaluation may have attracted mothers that were motivated and self-assured in relation to their skills as a parent, leaving less scope for improvement after an eight week programme and the sample may not have the level of risk that would benefit most from the intervention. The greater reliance for mothers testimony in some of the items in the first Griffiths assessment may have affected the results combined with the low degree of stability of infant developmental scores in the first 18 months (Hindley, 1960) it is challenging to establish a significant difference in infant development with a small sample evaluated over two visits.

The pilot evaluation did not use a recognised screening tool to ensure parent that were involved in the study were at increased risk of poor outcomes. Parents were asked about their weekly income at baseline and although a high proportion of parents seemed to fit the criteria of living on less than 60% of the Welsh median income the exclusion of family tax or working tax credits could have resulted in a disproportionate amount of the parents being classified as living in poverty. Greater detail regarding these additional 'incomes' would have ensured that the families' economic status could be comparable with previous intervention studies with low income families.

The adaptation of the IT HOME measure to include predetermined items that were of interest to this study also made it impossible to establish any comparisons with other interventions that reported the full IT HOME. With hindsight it would have been preferable to use the full inventory.

Following the consent and collection of baseline data the engagement of parents in the group programme was reliant on group leaders establishing contact with families before the group started to encourage and maintain interest in joining the group. Inevitably the work-load of group

leaders varied and this may have limited their success in engaging parents that had originally consented to join the study.

The parents and babies in the study had access to other support programmes in their community and, although demographic and health data was collected and the groups were well matched on the socio economic demographics, the small sample size limited the potential for any moderator and mediator analysis of the results.

Future Directions

Further research comparing the PIPOc observation code with another established observational tool and test retest data needs to be conducted. Future evaluations with parents screened with validated measures at increased at risks of poor outcomes (young parents or those identified at recruitment as depressed, with low self-esteem or confidence) need to be conducted within a larger RCT study to establish whether the programme does have any significant impact on children at risk of poor outcomes. Longer follow up periods ideally until at least school enrolment would allow measures of child development to be meaningfully included in the analyses.

There is potential to evaluate the effectiveness of offering the IYPB group followed with additional Incredible Years twelve week Toddler Parenting group as the children enter a new developmental phase. A RCT reported by Landry, Smith, Swank and Guttentag, (2008) compared the maternal and child effects of offering and infant and toddler interventions in the home. Improvements in maternal warmth was evident after the infant intervention and quality of language input improved after mothers received the toddler intervention, interestingly the parents that received both infant and toddler interventions showed the optimal levels of responsiveness towards their child, suggesting that a second 'booster' of parenting support can have an additive effect on parenting skills.

The work of Niccols (2008) comparing a group intervention with home visiting support showed positive gains and reduced requests for further services from parents that attended a group-based intervention. An effective group-based parenting programme could be a cost effective method of reducing the subsequent burden on health and social care agencies related to underdeveloped social and academic skills, supporting all children to start school on an equal basis. In light of the encouraging effect on mothers sensitive responses a RCT evaluation of parents and their children receiving the IY Baby and Toddler parenting programme compared to home visits under the Family Nurse partnership would be worthy of serious investigation and a

valuable development in evaluating best practice and exploring the return on public investment of different interventions.

Final Conclusions

The evidence base related to the long term effects of the early years support for optimal development and maturation of children has generated political interest and cross party support. A great deal can be done to reduce the inequality identified in children's school readiness skills linked to poverty and underequipped parenting skills

Previous work evaluating the effectiveness of parenting programmes with parents of older children has shown the programmes to be effective in reducing negative child behaviour and improving child and parental mental well-being and parenting practices. The challenge with a brief intervention targeted at preventing problems from developing is to measure short-term changes that may predict long-term gains. Many existing observation codes have been developed to measure both positive and negative parent and child behaviours, however initial tests showed that a new code that targeted theory based positive parenting behaviours would be the best option for this study. The development and testing of the PIPOc provided a new simple tool that could be used in future studies with parents and babies. Further evaluations are needed to establish population norms, establish the code's test retest stability and validity.

The study indicated positive change in sensitive parental responding over a six-month period. This result from the first evaluation of the IYPB programme along with positive feedback from those involved in delivering and attending the programme provides some support for the WG investment in funding the training of parenting workers to deliver the IYPB programme. The IYPB programme has the potential to deliver benefits but requires further evaluation, ideally in a RCT including a larger sample of parents screened to be at greater risk of poor outcomes in the first year of a child's life.

The study has been a significant undertaking and with hindsight I would not have changed the IT HOME items and poverty assessment criteria. Other measures linked to depression such as the EPDS would have been of interest however it is unlikely that a sufficient sample would have been possible in light of the constraints on time and location. There are many positives from the study and I have learnt a great deal throughout the process. From the early stages of preparing and application for ethical approval, developing a study protocol and observation code and in the exploration that people living in poverty may be less equipped to be good parents. Many of the families that I met in the study were supported by a large network of family, friends and parenting

workers eager to support them. This may not be the case in more socially isolated circumstances and I hope that this pilot study of the Incredible Years Parent and Babies programme will help future evaluations in developing the evidence base for interventions delivered before problems develop ensuring that all children are given the best possible start in life.

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APPENDIX A

Summary of Incredible Years Parent and Baby programme

Summary of Incredible Years Parent and Baby programme

Six modules delivered over eight sessions

Getting to Know Your Baby (0—3 months)
- Learning how to observe and read babies' cues and signals
- Understanding how to cope with babies' crying and fussy periods
- Learning about feeding and burping
- Understanding the importance of communication with babies
- Learning about babies' fevers and recognizing when to call the doctor
- Providing babies with visual, auditory and physical stimulation
- Learning about soft spots, baby acne, sleep habits, spitting, normal bowel movements and diapering
- Learning how to baby-proof a home
- Learning about babies' developmental milestones in the first 3 months
- Understanding the importance of getting rest and support and shifting priorities

Babies as Intelligent Learners (3—6 Months)
- Understanding "observational learning" or, mirroring and how babies learn
- Learning about how to talk "parent-ese" to babies
- Learning songs to sing to babies
- Understanding the importance of parental communication for babies' brain development
- Understanding normal developmental landmarks ages 3-6 months
- Learning ways to keep babies safe

Providing Physical, Tactile and Visual Stimulation
- Learning about ways to provide physical and tactile stimulation for babies' and its importance for brain development
- Understanding the importance of visual and auditory stimulation
- Modulating the amount of stimulation babies receive
- Understanding the importance of reading to babies
- Providing opportunities for babies to explore safely
- Involving siblings and other family members in baby play times
- Learning games to play with babies
- Learning to keep babies safe during bath times and other activities

Parents Learning to Read Babies' Minds
- Learning how to read babies' cues and developmental needs
- Understanding how to respond to babies' crying and fussy periods
- Strategies to set up predictable routines and bedtime rituals
- Learning how to help babies feel secure and loved
- Understanding how babies can be over or under stimulated
- Learning strategies to help babies' calm down
- Knowing how to get support
- Being aware of baby's temperament and working to achieve a good temperament fit

Gaining Support

- Understanding the importance of finding time for oneself to renew energy for parenting
- Understanding the importance of involving other family members and friends in baby's life
- Learning how to get support from others
- Knowing how to inform other infant care providers or baby sitters of baby's needs and interests
- Knowing how to baby-proof house and review checklist
- Learning developmental infant landmarks (6-12 months)

Babies Emerging Sense of Self (6—12 months)

- Understanding how babies learn - "observational learning" and modelling
- Learning how to provide predictable routines or schedules for babies
- Learning how to introduce solid foods in child-directed ways
- Learning about successful ways to wean babies when the time is right
- Knowing how to allow for babies' exploration and discovery
- Knowing how to talk to babies in ways that enhance language development
- Understanding how to make enjoyment of baby a priority
- Learning about visual and nonverbal communication signals
- Understanding about babies' development of object and person permanence
- Understanding how to baby-proof a home and completion of checklist

APPENDIX B

ISRCTN information

Evaluation of the Incredible Years Infant programme

ISRCTN	ISRCTN62055412
DOI	10.1186/ISRCTN62055412
Public title	Evaluation of the Incredible Years Infant programme
Scientific title	Prevention of conduct problems and anti-social behaviour in at risk infants: a small scale cluster, non-randomised trial
Acronym	IY Infant evaluation
Serial number at source	3; 10/WNo01/40
Study hypothesis	The main hypothesis is that attendance at an Incredible Years Infant group for 8 weeks will increase parental confidence and encourage positive parenting as measured using the coded observed interactions and expressed emotion at the 6 and 12-month post baseline follow-up visit. Other areas of interest in this study are the level of appropriate stimulation provided to the infants, which could encourage the developmental quotient of the infants. Parental mental well-being may be improved through the supportive environment and encouragement of participants to link up with other group members for support both during and after the group. The emphasis on safety issues may raise parents' awareness of the potential hazards and action needed to prevent unintentional injury in the home. As the results of the toddler study suggests maternal mental well-being may increase following attendance on the infant programme.
Ethics approval	1. Bangor University School of Psychology Ethics Committee approved on the 16th July 2010 2. NHS North Wales Research Ethics Committee (REC) approved on the 19th July 2010(ref: 10/WNo01/40) 3. NHS R&D Internal review panel approved on the 5th August 2010
Study design	Small scale cluster non-randomised trial using a stepped wedge design
Countries of recruitment	United Kingdom
Disease/condition/study domain	Infant development, carer well being
Participants - inclusion criteria	1. Participants must have babies that are 2 - 16 weeks old at the baseline visits and are deemed by their Health visitor to live on a low income 2. Intervention families must agree to attend the 8-week programme with their baby
Participants - exclusion criteria	1. Parents that have previously attended a Baby parenting programme are excluded from the research 2. Families that live beyond North and Mid Wales are excluded as Group leaders will need to attend weekly supervisory meetings and families will need home visits by the researcher. One Intervention cluster will provide parent-completed measures collected by their group leader.

Anticipated start date	21/09/2010
Anticipated end date	01/11/2012
Status of trial	Completed
Patient information material	Not available in web format, please use contact Mrs Catrin Jones [pspae8@bangor.ac.uk] to request a patient information sheet
Target number of participants	78 families in total. We aim to recruit families on a 2:1 ratio (Intervention :control) in the research (54 Intervention and 24 control)
Interventions	The Incredible Years Infant programme (Webster-Stratton, 2008) is delivered in a group format to parents and their babies over 8 x 2 hour sessions. The programme is aimed at encouraging parent understanding of parenting and infant development in the first 12 months.
Primary outcome measure(s)	Video recorded coding of interactions between the primary caregiver and their child at the 6- and 12-month post -baseline follow-up visit.
Secondary outcome measure(s)	1. Assessment of the home environment: provision of suitable environment and safety awareness of the parent 2. Assessment of maternal mental health 3. Child developmental assessment All outcomes will be measured at baseline, 6 months post-baseline and 12 months post-baseline.
Sources of funding	European Social Funded Knowledge Economy Skills Scholarship (KESS) managed by 1. Bangor University (UK) 2. Incredible Years Wales charity (UK) http://incredible-years-wales-research.bangor.ac.uk/

APPENDIX C

Letter to Service Mangers

May 28, 2010

Dear ,

Researching and evaluating the Incredible Years Baby programme

The Incredible Years Wales research team at Bangor University is undertaking the first evaluation of the IY Infant parent programme designed by Professor Carolyn Webster-Stratton for parents of babies in their first year of life to promote children's early development. This study will be undertaken by Catrin Hedd Jones for her PhD, supervised by myself, Dr Tracey Bywater and Dr Dave Daley. Catrin will be helped by other members of the research team in data collection. For our main trial we are seeking to recruit six participating services from across North and Mid Wales.

We intend to undertake a structured evaluation of the Baby programme. Services participating in trial would assist the research team in recruiting families, provide experienced group leaders to deliver the programme and allow adequate time for staff to attend supervision. Each service will recruit between 8-10 families with babies aged 6 weeks- 5 months at the start of the evaluation, one third of whom will be allocated to a control condition and offered attendance at the toddler programme once the six month follow-up measures are completed.

Benefits to participant services include provision of leader files, parent handouts, raffle prizes etc. Videotaping of group sessions and attendance by one of the leaders at weekly supervision in Bangor would be required throughout the eight weeks of the course. Certification as a baby programme group leader is likely to result from participation. The research team will also provide the service providers with evaluation data as well as financial incentives for participating families who will be observed in their own homes and also complete a battery of questionnaire measures. Our timetable involves asking three services to recruit for delivery of Baby programme between October and December 2010 and three services to recruit for a January 2011 start. Participating areas will be randomly allocated to intervention or waiting list control conditions.

A meeting will be held on Wednesday 30th June for services interested in participating in the study to learn more about it and to develop a strategy for recruitment. We would be happy to see both service managers and potential group leaders. Research group leaders from consenting services will then be invited to attend a planning day on Monday 6th September, 2010.

The Welsh Assembly Government provided all Children and Young Peoples partnerships in Wales with a copy of the Incredible Years Infant and Toddler programmes in addition to free add-on training for the baby programme for two members of staff who have completed basic leader training. There will also be a new three-day basic training offered in 2010/11 specifically for people who work with 0 – 3 year olds and who will only deliver the baby and toddler programmes

The next Baby add-on training session will take place on June 29th(Bangor). Further details of these additional training places can be obtained through Dilys Williams, at the address below.

Our funds do not allow us to undertake an RCT outside North and Mid-Wales but for services from further afield or other local services we can provide pre- and post-group parent report measures for leaders to complete with parents. Each group will also receive one complete pack of weekly leader files with all handouts checklists etc. for the sessions and their leaders will be invited to attend supervision in Bangor and also receive a report analysing and giving feedback on the pre- and post-course measures.

We hope you feel as enthusiastic as we do about this opportunity to take part in the first evaluation of the Infant programme, and that you will join us as research partners. If you would like more information or like to express your interest in participating in the trial please contact the centre at the address below and Catrin Hedd Jones will be happy to speak with you.

APPENDIX D

List of Resources Provided to Group Leaders

	Quantity	Resource
	Set of 2	Leader Files
	Set of 8	Parent Handouts
	Set of 8	Agendas
	8	Weekly Sessions including: Weekly Evaluations all sessions- transferred to Participation sheet Leader Checklist all sessions to be returned weekly Freepost Envelope all sessions to be returned weekly Parent Participation summary sheet (session 1-8) submitted in the last supervision Contact List session 1 Self-Monitoring Checklist session 1 Attendance Register session 1 Peer and Self-Evaluation Form sessions 4 & 8 Leader Collaborative Checklist sessions 4 & 8 Parent Satisfaction Questionnaire given in session 7, collected back in session 8 Parent Certificate session 8
	8	Poster - Children Learn What They Live
	1	Poster – Baby Brick
	1	Poster – Blociau Babanod
	1	Poster – Baby Brain
	8	Ring binders with Subject Dividers
	1	White Tack
	8	Fridge Magnets
	Set of 4	Flip Chart Pens
	1	Hole Puncher
✓	16	Wrapped Parent Present (to be given out in Sessions 4 & 8)
✓	16	Baby Present (to be given out in Sessions 2 & 6)
	1	Camera
	1	Tripod
	1	Tin/Box of Sweets
	1	Flip Chart Paper
	2	Video forms and instructions
	2	Group Session Cost Form completed weekly on each research parent and submitted in the last supervision
	8	DVD to transfer a copy of group delivery and submitted after each supervision

*Please note that **after each week's** supervision you will need to post in the supplied Freepost envelopes a copy of the recorded groups delivery on the supplied DVD-labelled with date, location and session number, Sessions checklist for the previous week and Receipts for the previous week refreshments-(maximum allocation £22:50/week for groups with 6 research families enrolled).*
*In addition to the weekly returns **at the last supervision** we will need copies of completed end of programme documents; Parent participation summary sheet for each research family,*
Parent satisfaction questionnaire for each research family and a completed IY Group Session Cost Form- from each leader.

Many thanks for your cooperation

Parent Presents (Wrapped) (one of each)

Radox Bubble Bath
Dettol Hand Wash
Toblerone
Picture Frame
Notebook
Candle
Facial Sponges
Tea Bags
Travel Sewing Kit
Umbrella
Simple Shower Wash
Emery Boards
Pedicure Set
Mugs
Celebration Chocolates
Herbal Tea

Baby Presents

Pelican Bib
Rattle
Teether
Weaning Spoons
Small Beaker
Tall Beaker
Baby Shampoo
Baby Bath
Feeding Bowl
Bowl with Lid
Baby Wipes
Baby Oil
Socket Covers
Digital Thermometer
Wash Mitt
Disposable Bibs

APPENDIX E

Service Mangers Expression of Interest

Agreement to participate in the evaluation of the Baby Parenting Programme

Please tick as appropriate

☐ We intend to recruit parents and offer the Infant programme in October- December 2010.
At least on group leader will be released to attend the weekly leaders supervision.

☐ We intend to recruit and offer the infant programme in January- March 2011.
At least on group leader will be released to attend the weekly leaders supervision.

☐ We wish to participate in the trial of the IY Infant Parenting programme, recruiting 'control' parents and offering the toddler programme in March- September 2011

Please provide the following information:

Name of manager: ----------Position: ----------
Address: ----------
Telephone Number: ----------Email: ----------
Group leader 1
Name: ----------Position: ----------
Numbers of IY groups co/delivered …….
Address: ----------
Telephone Number: ----------Email: ----------
Group leader 2
Name: ----------Position: ----------
Numbers of IY groups co/delivered…….
Address: ----------
Telephone Number: ----------Email: ----------

Point of Contact
Name: ----------
Position: ----------
Address: ----------
Telephone Number: ----------
Email: ----------

Resources provided by the research team:
The research team will provide all participating services with the materials required to run the groups, this will include a case containing leader files, all hand outs and gifts. All group leaders will have access to weekly supervision. **Video cameras to record the leaders infant programme delivery are available by prior arrangement with Catrin Jones- please confirm if you need these with this document.**

Resources provided by you:
Participating services will be required to fund the delivery of the programme including facilities and adequate time for staff to run the groups and attend supervision.
You will need to locate the Incredible Years Infant and Toddler Programme that has been sent to your CYP or to purchase a set of the programme materials. The Welsh Assembly Government has provided these to every CYP in Wales.

Managers Signature: ----------

Managers Name: ----------

Thank you again for your support, and we very much look forward to working with you.

APPENDIX F

Information for Group Leaders to Explain Study to Intervention Parents

Incredible Years Baby programme evaluation Phase 2

Referral Information

Group leaders to approach potential families in their area who:

- Have a baby born after the 6th August 2010
- You believe to be on a low income/are dependent on benefit
- Who would benefit from a parenting programme

From each area we need names from approximately 8 families (our actual sample will be 6 but not everyone will still want to take part when phoned by the researcher)

Inclusion Criteria

To be included in the study the family must reach the following criteria:

- **The parent will not have been a member of any infant parenting programmes**
- **Parents language spoken with their baby is either English or Welsh**
- **Child to be aged between 2 weeks and 4 months (at time of visit by researcher 8/11/10-10/12/10)**
- **The baby's main caretaker will be able to attend a day-time group**

Group leaders spiel (a guide if needed)

We are trying to identify people who may benefit from a service that will be offered by *(Group leaders name)……..*

The Trust is funding a new Parent Support for parents of babies in the next few months. It will be run at* …(Location and day)……... *This is a new programme that has been really successful for families with older children, but we need to find out if it works as well with younger children. Bangor University are going to do a research study to find this out for us. If you agree to take part a researcher will visit you at home 3 times in a year and ask some questions mainly about X. They will also watch how X behaves around you. After the first visit you will be invited to attend a Baby parenting group which starts on ……(Date)…….and will be held for 8 weeks in (Venue)…….

You will get £10 in cash each time you complete these research sessions.

If you would like to attend the Baby Parent Support Group and help with the research I can forward your name to the researcher who will contact you and be able to give you more information on the group and the study.

Please complete the participant record log and pass the families information name on if:

1. The family reaches inclusion criteria
2. The parent is interested in taking part in the Infant parent group
3. The parent is interested in taking part in the research being conducted by the University

Please pass the name on to the research team as soon as possible and no later than 29th October, 2010 Any problem or questions please contact: Catrin Jones:

Tel: 01248 382651/ pspae8@bangor.ac.uk Nantlle Building, Bangor University LL57@PZ

APPENDIX G

Information for group leaders to explain study to control parents

Bangor Baby research Phase 2

Referral Information

Please approach potential families in their area who:

- Have a baby born August- December 2010
- You believe to be on a low income/are dependent on benefit
- Are not currently on a baby parenting programme

Inclusion Criteria

To be included in the study the family must reach the following criteria:

- **The parent will not have been a member of any infant parenting programmes**
- **Parents language spoken with their baby is either English or Welsh**
- **Child to be aged between 2 and 6 months**

Group leaders spiel (a guide if needed)

Bangor University research families with babies in our area. If you agree to take part a researcher will visit you at home for 90 minutes 3 times in a year and ask some questions mainly about X. They will also watch how X behaves around you.

You will get £10 in cash each time you complete these research sessions.

If you would like to help with the research I can forward your name to the researcher who will contact you and be able to give you more information on the study.

Please complete the parent agreement for contact details to be forwarded and pass the families information name on if:

- The family reaches inclusion criteria
- The parent is interested in taking part in the research being conducted by the University

Please pass the name on to the research team as soon as possible.

Any problem or questions please contact:

Catrin Jones: Tel: 01248 382651/ pspae8@bangor.ac.uk
Incredible Years Wales
Nantlle Building
Normal Site
University of Wales, Bangor
Bangor
LL57 2PX

APPENDIX H

Parents expression of interest form.

Date: 10/1/11

Parent's agreement for contact details to be forwarded to Catrin Jones Bangor Baby research

Please initial in the box if you would like a home visit by the researcher to explain how my baby and I could be involved in the research. ☐

Please provide the following information to enable our researchers to arrange a home visit. This information will not be passed on to anyone outside the research team:

Baby's name……Baby's date of Birth: ----------

Your name: ----------

Address: ----------

Post code: ----------

When is the most convenient time to visit you and your baby? (e.g. when other children may be in school)----------Telephone Number: ----------Mobile number: ----------

Email: ----------

First language:_____

Signature: _____ Date _____

GROUP LEADERS TO COMPLETE:

Group leader	Date of visit
Parent/guardian name(s)	
TO TAKE PART the Baby must be *younger than 6 months on 9/2/11* and the adult has *not previously attended an Infant parenting programme*.	
Parent response to getting more info on the research: Very keen ☐ Quite keen ☐ Not very keen really ☐	
Comments / Concerns?…… Any lone working issues?…… …….	

…….THANK YOU…….

PLEASE RETURN in the freepost envelope to CATRIN JONES

School of Psychology, Ground floor, Nantlle Building, Normal site, Bangor University, Gwynedd LL57 2PZ

RESEARCH TEAM TO COMPLETE:

Date second contact made:
Did they decline or accept a visit for more info?
Did they decline or accept to take part?
Reason for not taking part…… ……

APPENDIX I

Intervention Parent Information Letter.

Information sheet: Version 3
19 July 2010

Participant Information Sheet

Research Title: Evaluating the Incredible Years Baby Parenting Programme.

Investigator: Catrin Jones (PhD Student)
Supervisors: Professor Judy Hutchings
Dr David Daley
Dr Tracey Bywater

We would like to invite you to take part in a research study. We would like you to take your time to read this participant information sheet. The sheet will tell you what the research is about, and what we would need you to do if you take part.

What is the purpose of this study?
The study will examine how helpful parents find the Incredible Years Baby Parenting Programme. The programme runs for eight weeks and is designed for parents of babies under 5 months. The main aim of the programme is to help parents to support their baby's development in their first year.

Why have I been asked to take part?
You have been asked to take part because you are the parent of a baby between 2 weeks and 4 months of age, and you live in an area where the Programme will be offered to parents. The parenting programme has been designed specifically for your child's age. With your agreement, your health visitor has given your name to the project, because you have said that you would like the chance to attend a parenting group and to help us with our study.

What do I have to do?
If you take part you will be asked to attend an 8 session parenting group. Each session will last two hours, and will be run in your local area on a weekly basis. A member of a small research team will visit you on four or more occasions at your home. The number of home visits you have will depend on your baby- if he/ she needs a nap we will return within a week.

All groups will have a first visit from the research team. These visits will happen sometime between September and December 20010 you will be visited six and twelve months after this first visit to repeat all the assessments.

During the home visits we will ask you to fill out three short questionnaires about you, your child and your home. A trained researcher will carry out a developmental assessment with your child. We will record you talking about your child for 5 minutes. You will also be recorded on video for 10 minutes playing with your child. Every time the research team visit you they will explain to you in full what will happen during that visit. All instructions can be given in English and Welsh. Each visit will last no more than two hours.

What are the possible benefits of taking part in this research study?
The benefit of taking part in this research study is the opportunity to attend an 8- week parenting course. The course has been designed to inform you of your child's developmental needs. The course will also give you the chance to share your experiences of parenting and give support to you and other parents.

What are the possible risks of taking part in this research study?
We have done everything we can to make sure that no harm will come to you or your child during the course of this study. All members of the research team have had thorough criminal checks. Researchers are experienced in using all measures, and are trained observers.

What are the procedures in place to ensure confidentiality?
To ensure confidentiality and data protection, the contact details and identity of participants will not be disclosed to anyone other the main research team. When we write up the findings we will only be reporting the information for the group as a whole. All information relating to you
and your family i.e. consent forms, contact details audio or video recordings will be kept in a locked filing cabinet in the Bangor University. All of the information we collect from you will be destroyed securely three years after the end of the study. Your data will be entered into the database using an identification number not your name. However, if any child protection issues arise, or any other issues that require the research team to share information with other services, you will be informed and the relevant information will be passed to the appropriate authorities.

Will I be paid for helping the research team?
You will receive £30 as a thank you for your time and co-operation. £10 will be paid at the first session of the parent group and another £10 will be paid at the end of each 6-month follow-up.

What information will I get after the study?

After you have taken part in the study, you will be sent a short report. This report will explain what we found after the study.

We will give you the names and contact details of the main researchers so that if you have any questions after the study has ended, you will know who to contact. The main researchers will be more than happy to answer any questions you have.

What will happen if I don't want to carry on with the study?
Taking in this research is entirely voluntary and you can stop taking part at any time without giving any explanation. If you withdraw from the research part of the study you can still carry on with the parenting group. If you are unable to finish the parenting course we would still like you to remain part of the study. If you move from the area we still want you to continue to assist the researcher during her scheduled visits if you can.

If you withdraw from any part of this study it will not affect your access to other health and social care services for you or your baby.

If you would still like to take part in this study then you will be given this information sheet to keep and be asked to sign a consent form.

If you have any queries about this research please contact

Catrin Jones,
Nantlle Building, Normal Site,
Bangor University, Bangor, Gwynedd LL57 2PZ.

I can be contacted on this telephone number: 01248 382651. If I am unable to answer your call, you can leave a message and you will be called back as soon as possible.

Thank you. We look forward to working with you.

Yours sincerely
Catrin Jones

If have any complaints about this research, please contact the following people;
Professor Oliver Turnbull Head of the School of Psychology or
Mrs Mary Burrows, Chief Executive, Betsi Cadwaladr University Health Board,

APPENDIX J

Control Parent Information Letter.

Information sheet: Version 4
19 July 2010

Participant Information Sheet

Research Title: Evaluating the Incredible Years Parenting Programme.

Investigator: Catrin Jones (PhD Student)
Supervisors: Professor Judy Hutchings
Dr David Daley
Dr Tracey Bywater

We would like to invite you to take part in a research study. We would like you to take your time to read this participant information sheet. The sheet will tell you what the research is about, and what we would need you to do if you take part.

What is the purpose of this study?
The study will examine how helpful parents find the Incredible Years Parenting Programme. The programme runs for twelve weeks and is designed for parents of children under 3 years of age. The main aim of the programme is to help parents to support their child's development in their early years.

Why have I been asked to take part?
You have been asked to take part because you are the parent of a baby between 2 weeks and 4 months of age, and you live in an area where the Programme will be offered to parents when your baby will be older than 7 months of age. The parenting programme has been designed specifically for your child's age. With your agreement, your health visitor has given your name to the project, because you have said that you would like the chance to attend a parenting group and to help us with our study.

What do I have to do?
If you agree to take part take part a member of a small research team will visit you on four or more occasions at your home. The number of home visits you have will depend on your baby's responses - if he/she needs a nap we may need to return a week later to complete the assessment

All families will have a first visit from the research team sometime between September and December 20010. Researchers will return to repeat the same questionnaires six months after the first visit, after which you will then be

invited to attend an Incredible Years Toddler parenting programme, this 12 session parenting group will be arranged within your area and will run for two hours every week. Our final visit will be 12 months after the first home visit.

During the home visits we will ask you to fill out three short questionnaires about you, your child and your home. A trained researcher will carry out a developmental assessment with your child. We will record you for five minutes talking about your baby. You will also video record you talking and playing with your baby for 10 minutes. Every time the research team visit you they will explain to you in full what will happen during that visit. All instructions can be given in English and Welsh. Each visit will last no more than two hours.

What are the possible benefits of taking part in this research study?
The benefit of taking part in this research study is the opportunity to attend a free and fun 12-week parenting course. The course has been designed to inform you of your child's developmental needs. The course will also give you the chance to share your experiences of parenting and give support to you and other parents.

What are the possible risks of taking part in this research study?
We have done everything we can to make sure that no harm will come to you or your child during the course of this study. All members of the research team have had thorough criminal checks. Researchers are experienced in using all measures, and are trained observers.

What are the procedures in place to ensure confidentiality?
To ensure confidentiality and data protection, the contact details and identity of participants will not be disclosed to anyone other the main research team. When we write up the findings we will only be reporting the information for the group as a whole. All information relating to you and your family i.e. consent forms, contact details audio and video recordings will be kept in a locked filing cabinet in the Bangor University and destroyed securely three years after the end of the study. Your data will be entered into the database using an identification number not your name. However, if any child protection issues arise, or any other issues that require the research team to share information with other services, you will be informed and the relevant information will be passed to the appropriate authorities.

Will I be paid for helping the research team?

You will receive £30 as a thank you for your time and co-operation in completing the measures. This will be paid in instalments of £10 after all the assessments have been collected at each 6-month time-point.

What information will I get after the study?
After you have taken part in the study, you will be sent a short report. This report will explain what we found after the study.

We will give you the names and contact details of the main researchers so that if you have any questions after the study has ended, you will know who to contact. The main researchers will be more than happy to answer any questions you have.

What will happen if I don't want to carry on with the study?
Taking part in this research is entirely voluntary and you can stop taking part at any time without giving any explanation. If you withdraw from the research part of the study you can still carry on with the parenting group. If you are unable to attend or finish the parenting course we would still like you to remain part of the study. If you move from the area we still want you to continue to assist the researcher during her scheduled visits if possible. If you withdraw from any part of this study it will not affect your access to other health and social care services for you or your baby.

If you would still like to take part in this study then you will be given this information sheet to keep and be asked to sign a consent form.

If you have any queries about this research please contact

Catrin Jones, Nantlle Building, Normal Site, Bangor University, Bangor, Gwynedd LL57 2PZ.

I can be contacted on this telephone number: 01248 382651. If I am unable to answer your call, you can leave a message and you will be called back as soon as possible.
Thank you. We look forward to working with you.

Yours sincerely
Catrin Jones
If have any complaints about this research, please contact the following people;
Professor Oliver Turnbull Head of the School of Psychology or
Mrs Mary Burrows, Chief Executive, Betsi Cadwaladr University Health Board,

APPENDIX K

Consent Form

Evaluation of the Incredible Years Infant parenting programme

I agree for my child to participate in this study, undertaken by Catrin Jones from Bangor University. This study will be carried out under the guidance of Dr David Daley and Dr Tracey Bywater. I have read about the study and understand the information.
I understand that my child and I are free to withdraw from this study at any time if we so wish, and are under no obligation to take part in any aspect of this research.
I also understand that all data will remain confidential with regard to our identity.

Please initial the box if you are agree with the statement:

I am willing for my baby to participate in this study ☐

I am willing to answer any questions about my baby ☐

I am willing for an audio recording to be used in the research ☐

I am willing for video recording to be used in the research ☐

I would like a short report about the study findings ☐

Signature _____ Date :_____

Your name in print: _____
Relationship to baby: _____
Your baby's name: _____
Address: _____
Post Code _____
Telephone no: _____Mobile no: _____
E-mail: _____

Sometimes we lose track of participants if they move; to help us keep in touch please could you give us the contact details of a family member or friend.

Er mwyn cadw mewn cysylltiad drwy'r ymchwil fuasi'n ddefnyddiol cael manylion cyswllt ffrind / teulu.

Name/Enw:_____

Cyfeiriad/ Address: _____Cod Post/Post Code: _____
Rhif ffon/ Telephone no: _____Mobile:_____

E-bost/ E-mail: _____

APPENDIX L

Group video consent form

Video consent form
TO BE PRINTED ON Company/Charity HEADED PAPER

Participant ID……Children's centre……..Group start date……

FORM OF CONSENT FOR VIDEO RECORDING OF INCREDIBLE YEARS PARENTING GROUP

I (PRINT NAME), ... understand that the Parenting Group leader (PRINT NAME), ... of the (PRINT CHILDREN'S CENTRE)..... will be recording some of the sessions of the Parenting Group for which I have enrolled. This is an essential requirement for facilitators so that they can provide supervision and support regarding their delivery of the programme, to ensure that it is being delivered well. The recording will focus on the facilitators rather than the parents.

I AGREE to the recording, which will be available to me to view should I so desire.

I AGREE that the recording may be used by the group leaders to review how the programme is working and to plan for future sessions, in their own research and for their own supervision from the programme designer.

SIGNED: ..... Date: .....

I AGREE / DO NOT AGREE (*delete as appropriate) that it may also be shown to other practitioners within children services for evaluation and training purposes.

SIGNED: ..... Date: .....

NAME and DESIGNATION OF GROUP LEADERS:

1..... .....
2..... .....

APPENDIX M

IYPB programme matrix and proposed assessments

Content	Objectives	Why important	Assessment
1 0-3 months	Cues, signals	Unique &Bonding	Observation (Obs)
	Communication		Obs
	Self care	Negative effects	WEMWBS
	Appropriate stimulation		Obs
	Feeding	Breast/ bottle data	KPCS PDHQ
	Crying	3-12 w fussy, norm, self org.	KPCS PDHQ
	Safety when to call the Dr	Stats? On contact with healthcare	HOME PSOC/KPSC
2. 3-6 m Intelligent learners	Mimic/ observational learning	Learn that they get a response, notice and reflect (name)feelings	Obs
	Parent-ese	Language development	Obs
	Developmental landmarks	2-4 mo. Attachment	Griffiths
	Brain Development	Gerhart	
	Singing	Creativity and predictability	
	Safety	Attachment	HOME
3. Physical,	Modulating		
tactile and visual	Reading babies cues		Obs
stimulation	Safe exploration		Obs
	Involving other family members	Support	PDHQ-Support quest.
	Reading	Language exposure and attention span	HOME
	Massage	Physical contact	Obs
	Games	Rituals = security	Obs HOME
	Safety during bath time		Safety assess
	Buddy system	Networks	Social quest
4. Reading the babies minds	Help to self-regulate 4-6mo<		
	Temperament	Match	
	Predictable routines and bed time rituals 4-5 mo.	Security =attachment	HOME
	Support	Social networks	PDHQ
5. Support	Involving others	Invaluable support & Sibling feelings	

	Inform of baby's needs/ interests	Transition into day-care	Questions on contact with others
	Baby proof house	Checklist in course	Safety & checklist
	6-12 month landmarks		Griffiths
6. 6-12 m babies emerging sense of self	Modelling and orbs learning		Obs
	Feeding		PDHQ
	Exploring	Scaffold development	
	Developmental games- peek a boo	Object person permanence	Griffiths
	Baby proof homes	Stats	Safety
	Predictable routines	Security	
	Signals	Communication	
	Enjoyment of baby	Attachment	PSFMSS KPCS

APPENDIX N

Study Protocol

Evaluation of the Incredible Years Infant Programme: Project Protocol Version 2

1. Evaluation of the Webster –Stratton Infant Parenting Training Programme

1.1. Purpose of the protocol

The protocol provides information regarding the research project to evaluate the Webster-Stratton Infant Parent Training programme. Section 1 will provide an overview of parent training programmes for preventing conduct disorders and the evaluation aims.
Section 2 will describe the evaluation design and procedures that will be implemented to ensure the programme is delivered with fidelity. The measures that will be used to evaluate the effectiveness of the Infant parenting programme are described in Section 3.
Please note that the term mother is used to describe any primary carer attending the Programme.

1.2. Background literature: Parent training programmes for conduct disorders

A great deal of evidence is now available which early behaviour difficulties as young as six months old (Bates, Bayles, Bennett, Ridge, & Brown, 1991, Rose, Rose, & Feldman 1989; Sroufe, Egeland, & Kreutzer, 1990; Weinfield, Sroufe, & Egeland, 2000) of can predict future problems. The environment in which children are cared for can also have an impact on their development (Rutter et al.,1998) with children living in areas identified as deprived at increased risk of poor outcomes as they enter school (Caspi, Taylor, Moffitt, & Plomin, 2000). These early challenges and inequalities in children's skills and ability to learn can have a long term impact on their ability to fulfil their academic and earning potential.

The work of Shonkoff (2001) highlighted the importance of the first years for children cognitive growth and development. A stimulating and supportive environment where a child is recognised within a loving relationship can influence the childs' developing sense of self and attachment to others later in life (Ainsworth, 1985; Bowlby, 1997; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Holden, 1997). There are particular risks relating to family and parenthood in the first two years. These include maternal postnatal depression (Murray, Cooper, Wilson, & Romaniuk, 2003), impaired bonding/insecure attachment of children to their parents and impairments in maternal responsiveness towards

the child (Campbell, Cohn, & Myers, 1995). Murray and Cooper (2003) have shown that one of the casualties of postnatal depression is low levels of cognitive stimulation for the child, resulting in language and social delays which are themselves s for criminality in adult life (Gibb et al., 2012; Stattin & Klackenberg-Larsson, 1993).

The impact of parenting style on babies is profound (Raine, Brennan, & Mednick, 1994) and research into infant brain development has shown increases in the activity or reactivity of the brain stem caused by chronic, traumatic stress, or decrease in the capacity of the cortical areas to moderate that reactivity, may increase an individual's aggressiveness and impulsivity (Perry, 1997). A range of risk factors have been associated with poor outcomes for children (Latimer et al., 2012). Children living in poverty have been studied and show an 11 month delay compared to their middle income peers at five years of age (Wladfogel &Washbrook, 2010). Poor quality of parenting and parent–child interaction are related to unfavourable attachment and poor social adjustment (Campbell, 1997; Collins et al., 2000; Connell & Prinz, 2002; De Wolff & Van Ijzendoorn, 1997; Goldsmith & Alansky, 1987; Holden, 1997)

Conversely, a warm and caring parent can have a significant impact on their child in preschool with studies showing children of positive parents showing less expressed anger and sadness (Morris, 2000; Shaw & Vondra, 1995). The beneficial effects of positive early experience and environment on child development can be explained through interventions for young children and their families. However since the shift in political interest from cure to prevention is relatively new, there is little high-quality research in this area.

The Nurse-Family Partnership programme, an intervention targeting high risk first time mothers throughout pregnancy and during the first year of life, has shown a range of benefits including reductions in child abuse and neglect compared with control group mothers, and reductions in teenage arrests and convictions compared with control group children (Olds, Henderson Jr., & Kitzman, 1994; Olds, Hill, Mihalic, & O'Brien, 1998) The Department of Health in England are undertaking a demonstration trial of this programme in 20 sites, however this is a resource intensive, targeted programme and may not be suitable as a universal programme in high risk areas.

The Incredible Years (IY) BASIC Parent Programme has a substantial evidence base for the prevention and reduction of CD for children aged 3 – 8 (Hutchings et al., 2007; Scott,

Spender, Doolan, Jacobs, & Aspland, 2001;Webster-Stratton, 1998; Webster-Stratton, Reid, & Hammond, 2004). Parents of 1-3 year old children showed a decrease in negative interactions and improved maternal well being after attending the IT Toddler parenting programme (Griffith, 2011). Incredible Years Parenting programmes incorporate all of the identified specific and common factors known to demonstrate effective outcomes for those families whose children are at greatest risk of developing Conduct Disorder (Hutchings, Gardner, & Lane, 2004). The programme is delivered in a small-group format, in a collaborative manner. Key components are viewing video-clips to prompt discussion of important parenting principles, role-play/practice of strategies that will be effective in supporting the child and facilitating their learning of pro-social behaviour and home activities.

1.3. Evaluation aims

The strong evidence of effectiveness for this programme with high-risk 3- and 4-year-old children in North & Mid Wales Sure Start areas (Hutchings et al., 2007; Bywater et al., 2009) prompted the Welsh Assembly Government (WAG) to fund group leader training across Wales (Parent Action Plan, DfTE, 2005) and to specify the IY Parent Programme as appropriate for parents in Wales. In response to this Professor Webster-Stratton, the developer of the IY Series (which also includes programmes for children and for teachers) has developed two new parent programmes covering children's development over the first three years of life and agreed that the first evaluation of these newly developed interventions will be in Wales. This decision was made due to the previous experience in delivering and evaluating the BASIC Parenting Programme in Wales, knowledge of implementation fidelity of how to deliver the programme effectively, and the availability of trained leaders throughout Wales. Since the format and style of the new programmes mirrors that of the existing evidence based programme, it should produce equally effective outcomes (see Hutchings et al., 2004 for a review on common and specific factors of making evidence based interventions work). The new toddler programme was evaluated across Wales in 2007-2010 and the preliminary results from this trial are generating positive results with improved parental mental wellbeing and reduced instances of negative parenting observed in parents that attended the Toddler programme.

It is expected that the IY Parents and Babies programme will have similar benefits. Additional benefits that may arise from attending the 8-week programme may be increased social networks through meeting other mothers in a weekly group, parental mental well-being may be improved through the supportive environment and encouragement of participants to link up with other group members for support both during and after the group.

We hypothesize that after attending an Incredible Years Baby parenting group for 8 weeks

i. The mother will show increased sensitivity to their baby's needs.
ii. Parental confidence will increase,
iii. As the results of the toddler study suggest maternal mental well-being may improve following attendance on the parenting programme

Other areas of interest in this study are provision of appropriate stimulation for the babies that may have longer-term beneficial effects on the children's linguistic and intellectual development. The emphasis on safety issues may raise parents' awareness of the potential hazards and the required preventative action needed to prevent unintentional injury in the home. The improved understanding will increase expressed emotion from the primary caregiver after attendance on the programme when evaluated at the 6 and 12-month post baseline follow-up visit.

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2. Overview of the evaluation methods

Chief investigator- Catrin Jones,

2.1. Participants

In accordance to Caldicott Guardian guidelines, midwives, health visitors and parenting support workers working within communities in North and Mid Wales, will approach potential parents. Any interested parents will need to consent to their contact details to be forwarded to the chief investigator who will subsequently telephone to arrange an initial meeting in the parents' home to fully explain the planned research and their potential involvement.

The health visitor/ trained group leaders in each area will be responsible for initial recruiting participants and the chief investigator will obtain verbal and written consent for participating in the study. Each group will include eight families allocated on a 2:1 ratio of intervention: control. Participating families who consent to join the study will be allocated to an Incredible Years Parenting course either within the 6 months (Infant programme) or 12 months (Toddler Programme) depending on the group allocation after baseline measures have been collected.

All group leaders participating in the research will be expected to attend weekly supervision in the Incredible Years Centre in Bangor to ensure programme fidelity and support for each other during the running of the groups.

A total of 72 families will be recruited throughout North and Mid Wales. Following confirmation of ethical approval recruitment will occur in two phases.

Four areas will be targeted to recruit for the programme starting in September 2010 and a further five groups will be recruited to start in January 2011, resulting in 6 intervention groups and 3 waiting list control groups.

Groups 1-4
Babies born April-July 2010
13 September 22 October Baseline data collection from 36 families
11 October- 10 December 2010 Programme delivery for 3 groups (8 parents each) and supervision for group leaders
March- 15 April 2011 - Follow up 1, 6 months after baseline measures
12 september-14 October 2011 - Follow up 2, 12 months post baseline.
January 2010- Control families offered the Toddler programme

Groups 5-9
Babies born July- October 2010
1November- 10 December -Baseline data collection from 36 families
10 January-11 March Programme delivery and supervision
3May- 10 June Follow up 1, 6 months post baseline

7 November-2 December Follow up 2- 12 months post baseline
January 2010 Control families offered the Toddler programme

2.2. Inclusion/ Exclusion criteria

Participants will be excluded by age. The research will only recruit parents of infants aged 2 weeks-4 months at baseline (September-December 2010). This inclusion criterion is necessary due to the babies age range specified for effective delivery of the Infant Parenting programme.

Parents that have already attended an Incredible Years parenting programme will be excluded from the research as they may have previous knowledge and experiences that may moderate / mediate the outcome measures.

During the chief investigators first home visit the research will be explained fully to ensure that the parent has sufficient information and an opportunity to ask questions before they decide to give fully informed consent on their behalf and their baby participating in the study.

Baby parenting programmes will be provided in two phases with baseline measures being collected in September- October 2010 and November- December 2010.

Each group will include eight babies with an allocated 2:1 ratio as either intervention: control groups. Families who consent to join the study and live in an area offering the intervention will receive an Incredible Years Infant Parenting course either within 1 month of completing baseline measures. Waiting list control families will be offered a place on the next Incredible Years Toddler Parenting Programme in their area following the completion of the baseline and 6 month follow up measures.

2.3. Working with service providers

Incredible Years Wales have received Welsh Government support to provide free training to family workers throughout Wales. This has enabled over 400 parenting workers to attend the Group leader three day basic training and an additional one days training in the

Infant parenting programme. The uptake of the free staff training and programme manuals in each local authority and has facilitated a secure knowledge base for delivering the Infant parenting programme in Wales. The research will collaborate with certified group leaders who express an interest in being part of the first evaluation of the Webster- Stratton Infant parenting programme, intend to deliver the programmes in the set research time frame and agree to release leaders to attend weekly supervision during delivery of the infant programme, this will ensure continuity of programme delivery.

Letters describing the project will be sent to key individuals that have been trained in the Incredible Years Infant programme within North and Mid Wales. The Chief investigator will visit existing parent group leader teams in May- June 2010 to ensure clarity on the research project, evaluate the current birth rates and estimated recruitment in the different areas.

Service providers/ trained group leaders interested in contributing to the research will be invited to a meeting on the 30th June 2010 to describe the research plans and establish commitment from service providers. Group leaders taking part in the intervention will be invited to attend set up and resource days on the 6th September 2010 and 10th January 2011 and six subsequent supervision sessions to coincide with infant programme delivery.

All Baby Parenting group leaders participating in the research will be expected to attend weekly supervision in the Incredible Years Centre in Welshpool (Phase 1) and Bangor (Phase 2) to ensure programme fidelity and support for each other during the running of the baby parenting groups.

Intervention groups running during the first phase will consist of groups located in the North East Wales and Powys with weekly supervision provided by Dr Sue Evans from Powys. These supervision meetings will be held in Welshpool on the following dates.

Date & Time	**Meeting**	**Location**
6 September 10am-3pm	Set up and resources day	Welshpool
14 October 2-4pm	First weeks supervision	Welshpool

21October 2-4pm	Week 2	Welshpool
4 November 2-4pm	Week 3	Welshpool
11November 2-4pm	Week 4	Welshpool
18 November 2-4pm	Week 5	Welshpool
2 December 2-4pm	Weeks 6 and 7	Welshpool
9 December 2-4 pm	Week 8 -Last supervision	Welshpool

Intervention groups during the second phase starting in January 2011 will receive supervision by Prof Judy Hutchings in Bangor on the following dates;

Date & Time	**Meeting**	**Location**
10/1/11, 10am-3pm	Set up and resources day	Bangor
17/1/11, 10am-1pm	Week 2	Bangor
24/1/11, 10am-1pm	Week 3	Bangor
31/1/11, 10am-1pm	Week 4	Bangor
7/2/11, 10am-1pm	Week 5	Bangor
14/2/11, 10am-1pm	Week 6	Bangor
28/2/11, 10am-1pm	Week 7 and 8	Bangor
14/3/11, 10am-1pm	Overview and accreditation process	Bangor

2.4. Evaluation measures: rationale for selection

The measures used in this evaluation have been carefully selected to assess the effectiveness of the programme content. Following a general literature review of other research into the effectiveness of parenting programmes in the first year of a baby's life a matrix was developed to identify which measures would be most appropriate to evaluate separate elements of the infant parenting programme.

2.5. Design

The trial will be a small- scale pre-post test comparison pilot design that will enable comparisons between intervention and control families without depriving the control families from accessing the parenting programmes for more than 6 months. With a maximum of 8 dyads in each group. A total of 72 families will be recruited throughout North and Mid Wales with additional groups being recruited if the group sizes are below 8.

2.6. Intervention and programme integrity

The intervention is a 8-week Incredible Years Infant programme, for parents with babies under 12 months of age, run in groups of up to 12 parents (Webster-Stratton, 2008). Groups are run by certified group leaders who adhere to the programme delivery as specified in the programme manual. Strategies aimed at engaging and maintaining parental participation on the course include refreshments at each weekly meeting, raffle prizes for those competing weekly activities, provision of materials and /or home visits to parents that miss a session. All parent group sessions are videotaped and all group leaders attend weekly supervision with a programme mentor. Randomly selected videotapes are rated for programme integrity by the programme trainer. The integrity of the programme may be compromised if the programme is not adhered to in its entirety with all components applied, such adherence is necessary in order to preserve the behaviour change mechanisms that made the original model effective (Olds, Hill, Mihalic & O'Brien, 1998)

The research team will be trained in administrating the parent report measures, administering the developmental assessment and both audio and video coding systems. Although the chief investigator will not be blind to the allocation of participants, a researcher blind to the allocated conditions will code the main outcome measure of parents behaviour during recorded play with their baby in the home.

Home visits procedure

All the parent report and observational measures will be collected in the participant's homes. Home visits schedules will follow a set procedure unless the researcher and parent decide that this causes discomfort or distress to the baby. Parents and their babies will be visited at home and each visit will last no more than two hours.

2.6.1. Introduction.

After parents have given consent for their contact details to be forwarded to the research team they will receive a call from the chief investigator to arrange a convenient time for a home visit from a member of the research team. The parent must be reassured that they are not committing to taking part in the research until after the first meeting and that they can decide to opt out of the research at any time.

2.6.2. First Home visit

The researcher will introduce themselves and the research project aims and objectives to the parent. Following the parents informed consent for themselves and their infant to take part in the project the following measures will be completed. If parents lack literacy skills and confidence the researcher will request verbal replies to the reporting measures which will be completed with the researcher's support.

The parents will read or listen to the information sheet for parents. The control families will receive an information sheet explaining their involvement and access to the toddler parenting course after they have completed the baseline and first 6 month follow up measures.

Consent forms will be signed and dated before any measures are taken in the home.

2.6.2.1. Measures will be taken in the following order

i. Person Development and Health Questionnaire- this will be completed using a semi structured interview with the parent answering questions posed by the researcher as they complete the document.
ii. Expressed Emotion. The primary carer (usually the mother) will describe their baby and the parent speech sample will be recorded for further analysis.
iii. The researcher will start to assess the baby's development using the Griffiths assessment, any parental report questions will be asked after the parent has completed measures iv, v and vi.
iv. The Parental Confidence Scale will be completed by the parent responding to 15 statements on a five point scale.

v. The Warwick Edinburgh Mental Wellbeing Scale will also be completed by the parent responding on a five point scale to 14 statements describing the parents thoughts and feelings in the past two weeks. Completed forms will be placed in a sealed envelope to minimize any observer bias in the observation.

vi. Parents will complete the hazard awareness task by circling identified hazards from a picture depicting an area within the home (hall/ bathroom/ living room or kitchen).

vii. The primary carer will be asked to hold her baby for 5 minutes and communicate with no toys and for a further 5 minutes immediately afterwards using any additional toys/ props that are in the home to stimulate the baby's attention. This interaction will be recorded on a video camera for later analysis.

viii. The Infant/ Toddler HOME inventory will be completed by researcher observations and some parent report

Visit 2 If it becomes clear that the baby is tired or that the measures cannot be completed in the first visit arrangements will be made to return within 7 days to complete the baseline measures.

Visit 3 all participants will be revisited 6 months after baseline measures to repeat measures i-viii, measures may be completed in one visit, with the possibility to reschedule another visit within 7 days to complete any outstanding measures.

Visit 4 All families will be visited 12 months after the baseline measures for the final evaluation using the measures i-viii, with the potential to revisit within 7 days if any measures have not been completed.

2.7. Participant's feedback arrangements

Following the completion of data collection in December 2011 the data will be analysed by comparing the intervention and control groups and the outcomes at each time point. All participants will be offered a brief summary report sent to them after final analysis of the data (this will not contain any individual identifying data to maintain the participants

confidentiality). All participants will be offered a brief summary report to be sent to them at the end of the research.

The chief investigator will report on progress to the supervisors at monthly supervision meetings and at the Incredible Years steering group, which meets every 3 months. Wider dissemination of the project outcomes will be made available at the Incredible Years annual conference and through conference papers and posters at relevant conferences.

2.8. Equipment required

Each group leader will need access to a DVD player and video recorder to record their delivery of group sessions for review at weekly supervision meetings.
At least one leader from each intervention (infant) group will be required to attend weekly supervision in Bangor throughout the eight weeks of the course.
Researchers gathering the measures will require a stopwatch, Video camera and digital audio recording equipment for recording the parent- infant interaction.

2.9. Minimising confounding variables

The researcher will endeavour to build a positive relationship with the parents and their infants in an attempt to encourage parents to complete the measures. The procedures will be explained fully to the parents before administration to ensure that they understand what they are to do.

Researcher assisting in the coding of the observational will be blind to which group the participants have been allocated and this will control against potential bias with the

Researchers have been trained in administrating the parent report measures, the developmental assessment and coding systems. Any researchers involved in coding audio or video recordings will undergo rigorous training and regular dual coding sessions to ensure adequate inter-rater reliability.

2.10. Ethical considerations

The potential burden on the participants in this research is that they will be visited a maximum of six times for up to 2 hours at each visit. The researcher will endeavour to arrange home visits to be scheduled at times that are convenient for the parent and infant

(9:30am-2:30pm), avoiding lunchtimes, established sleeping times and school holidays (in households with older siblings).

The parents may become distressed if they reflect on low scores related to mental well-being. If there are any issues of concern disclosed by the parent the chief investigator would discuss the most appropriate form of action with her company supervisor Professor J Hutchings an Honorary Consultant Clinical Psychologist with the Betsi Cadwaldr University NHS Trust.

The Chief investigator has also completed the Mental Health First Aid (MHFA) and Applied Suicide Intervention Skills training (ASSIST) courses. This training provided an awareness of the possible symptoms and appropriate action that should be taken if any participant disclosed that they experienced depressed or suicidal thoughts. Supporting members of the research team will be briefed before home visits and will have a sheet of contact details available for parents the researcher deems in need of further support.

The safety of the infant and their carer will be paramount importance and the chief investigator will inform each participant at the first meeting that their confidentiality is assured unless the researcher deems that there is a risk to the welfare of the infant or parent, this will also be emphasized in the parent information document provided for each parent to read and retain during the first home visit.

2.11. Procedures to ensure confidentiality and data protection

All information collected will be recorded using the personal identification number allocated to each participant after baseline measures have been completed.

All personal data kept on hard copies contact details, consent forms, audio and video recordings will be kept securely in a locked filing cabinet the Incredible Years Centre, Nantlle Building, Bangor University.

The chief investigators laptop, which is encrypted and protected by a password known only to the chief investigator will only store statistical data which is unidentifiable. The laptop will be transported securely from the Incredible Years Office to the Chief investigators home and will always be kept securely within a locked filing cabinet when not in use. The data collected from participants will be securely stored in the Incredible Years Centre, Bangor until May 2017 (3 years after the end of the current research). Unauthorized personnel will not have access to

personal information and it will only be shared with necessary members of the research team.

Direct quotations will only be used after specific permission is granted directly from the group leader or parent. Statements from parents will only refer to the parent and child's gender and age. All the findings will be reported on a group basis with no individual's identified

The potential risks for the Primary Investigator will be visiting the families alone in their homes. Training in safety issues will be provided before home visits commence and service providers will be asked to notify the chief investigator if any families are unsuitable for lone home visits. The researchers will also adhere to the School of Psychology, Bangor University Ethics guidance and procedures regarding investigators working alone and away from the School of Psychology premises. The administrator at the Incredible Years Centre will have a detailed timetable of all home visits and contact details. The researchers will maintain regular contact with the administrator to confirm location whilst on visits. All home visits will be conducted within standard office hours.

2.12. Expected outcomes

We envisage that parents that attend the infant parenting programme will show

- Greater sensitivity to their babies needs and cues.
- Improved maternal mental well-being.
- Improved confidence in their abilities as a Parent.
- Greater awareness of potential hazards in the home.
- Greater incidence of expressed positive comments and warmth.

The developmental assessment may not show any significant differences within the timeframe of the research but will be used to assess if any of the infants present with significant developmental delay.

2.13. Proposed statistical analysis

This is the first evaluation of the Incredible Years Infant Parenting programme, and Chief Investigator does not know what are likely changes to be achieved with the various measures and cannot therefore estimate an effect size and required sample to demonstrate statistically significant changes for the intervention. However as this is a PhD study the

sample size has been based on what is realistic for the student to collect and will therefore form effectively a platform trial from which further funding could be sought in order to undertake a larger RCT. Incredible Years infant parenting groups will be running in 6 areas with 8 parents in each group. The 2:1 ratio requires 24 waiting list participants. Methods of data analysis will reflect those previously employed in the Welsh Sure Start Study published in the BMJ and BJP (Hutchings et al., 2007; Edwards et al., 2007; Bywater et al., 2009). Effect sizes will be calculated to enhance result replication, comparability and practical significance.

An initial analysis of the effects of baseline value, treatment and their interaction will be conducted. The difference between the intervention and waiting list control outcomes on follow - up scores will be based on the analysis of co-variance (ANOVA) and taking account the baseline values.

2.14. Demographic data.

Characteristics of the sample will be presented and any differences (if any) between the two conditions, intervention and control (and lost participants), will be established using chi-square and /or t-tests.

2.14.1. Cost implication

Using the leader cost diaries the costs incurred in establishing and running the programme and potential investment in time and resources required to provide the course will be calculated.

3. Protocol of measures

3.1. Demographics and family risk factors

Personal Data and Health Questionnaire

Personal Data and Health Questionnaire (PDHQ, Hutchings, 1996)

The PDHQ comprises of a semi-structured interview based on the work of Herbert (Herbert, 1993) and is aimed at attaining basic socio-demographic and general health data on the family members. The interview is typically carried out with the mother and covers aspects of the child's health and development, including birth complications, mothers health during

pregnancy and the birth. Additional questions related to housing, feeding, social networks and attendance at parent and baby groups have been added for the purpose of this research.

Data related to socioeconomic disadvantage are obtained from the PDHQ with the socio-economic risk factors being measured for each family. The risk factors are based on the findings of Dumas and Wahler (1983) and Rutter and Quinton (1977) and are: employment status, marital status, number of children, maternal education, housing, area of residence level of crime.

3.2. Warwick Edinburgh Mental Well-being Scale

Warwick- Edinburgh Mental Well-being Scale (WEMWBS; NHS Health Scotland, University of Warwick and University of Edinburgh, 2006).

The WEMWBS is a 14 item positively worded item scale with five response categories. It has a time frame for assessment of the previous two weeks, which is consistent with the DSM-IV criteria. The instrument covers most aspects of mental health with items summed to give an overall mean score.

3.3. Parental Confidence scale

The Karitane Parenting Confidence Scale (KPCS, Črnčec, Barnett, Matthey, 2008)

This parent completed tool has been developed specifically to measure Perceived parental self -efficacy in parents of infants aged 0–12 months. Parents are asked to read 15 statements and answer according to how often different feelings in caring for their infant. Initial research has shown the KPCS to demonstrate acceptable internal consistency (Cronbach's alpha1/4.81), test–retest reliability (r 1/4.88), and discriminant and convergent validity. The cut-off score of 39 is used and the scale's sensitivity and positive predictive power is 86%and 88%, respectively (Črnčec, et al., 2008).

3.4. Infant- Toddler HOME inventory

Infant / Toddler HOME Inventory (Caldwell and Bradley, 2003)

This measure examines the child's behaviour and the interaction between the parent and child within the home environment. This instrument comprises 45 items, divided into six subscales: Responsivity; Acceptance; Organisation; Learning Materials; Involvement and

Variety. There are numerous studies attesting to the validity and reliability of this widely used, and researched, tool.

3.5. Expressed Emotion

The Pre-school five-minute speech sample (PFMSS) (Daley, Sonuga-Barkre & Thompson 2003).

The PFMSS measures and assesses the emotional climate of the mother–child relationship. The mother is recorded for five minutes describing her thoughts and feelings about her child. The task yields four global ratings: initial statement, relationship, warmth, and emotional over-involvement as well as frequency counts of critical comments and positive comments. The PFMSS demonstrates good code–recode and inter-rater reliability, and adequate test–retest reliability and validity (Daley et al. 2003).

3.6. Infant Developmental Assessment

Developmental assessment- Griffiths scale (0-2 year scale revised1996)

The Griffiths scales measures development trends which are significant to intelligence or indicative of functional mental growth in babies from birth the 2 years of age. Following assessment of the infant a profile is obtained from five subscales examining Loco motor, Personal-Social, Language, Eye and Hand Coordination and Performance. The scales are widely used for both clinical and research purposes

3.7. Direct observation of parent- infant interaction

Coded interaction between the Primary caregiver and target infant

A 10-minute interaction between the parent and infant will be recorded on video camera by the researchers. This will be split into 2 five minute activities the first involving the primary carter holding her/his baby on their lap and interacting naturally with their baby and the next 5 minute involving the introduction of a ‘prop’ a toy or object that the participants can explore together.

Parent Group Evaluation Questionnaire

Parents Programme Satisfaction Questionnaire IY.

Copies of completed questionnaires will be collected by the group leaders and submitted at the end of the Infant parenting programme delivery.

3.8. Group leaders feedback

All infant parenting group leaders will be asked to provide a qualitative review of at the end of delivering the programme.

3.9. Safety –Parental hazard awareness evaluation

Safety checklist Hunt the Hazard sheets RoSPA

The parents awareness of potential hazards in the home will be evaluated using Hunt the Hazard Pictures sheets produced by the Royal Society of Protection against Accidents. Parents will be asked to circle dangers identified in one of three different locations within a home. Different scenarios will be presented at each evaluation time point and percentage of potential hazards identified by the parent calculated from each time point.

3.10. Economics Measure- **Infant group weekly costing dairy**

Each group leader will complete document with details of costing for establishing and running the Incredible Years Parent and Baby group, this will enable an evaluation the cost of running the groups. These costs will be used to undertake a preliminary assessment of cost effectiveness of the programme.

APPENDIX O

Personal Data and Health Questionnaire (PDHQ) with additional items

Participant ID: …… Date: ……. Postcode _____

Personal Data and Health Questionnaire

To be completed with Primary carer via semi-structured interview at the first home visit after the consent has been given & signed. You may need a calculator for the last section.

- **BACKGROUND DETAILS**

1a. Baby's Date of birth ……Due date ……Birth weight……Sex: M ☐ F ☐

1b. Primary carer's Date of birth ……Age …… Sex: M ☐ F ☐

1c. What is your preferred language for speaking……
Welsh ☐ English ☐ Other ☐ Please state……..

What is your preferred reading language ……
Welsh ☐ English ☐ Other ☐ Please state……..

1d. Relationship to baby:
Biological parent ☐ Step-parent ☐ Parent's partner (living together) ☐
Adoptive parent ☐ Foster parent☐Other ☐Please state……..

1e. How old were you when your *first* child was born?……..

1f. How old were you when you left school? …….

1g. Do you have any qualifications? No ☐ Yes ☐

If yes please state highest qualification ……

2. PREGNANCY

2a. Did you have any problems during pregnancy? Yes ☐ No ☐

If yes, please state……

2b. Were there any problems during the birth? Yes ☐ No ☐

If yes, please state……

3. BABY'S HEALTH AND DEVELOPMENT

3a. Do you feel that your baby is easy to manage?

Very difficult ☐ Difficult ☐ Ok ☐ Easy ☐ Very Easy ☐

3b How do you feed your baby? Bottle ☐ Breast ☐

If you now feed by bottle, but initially breastfeed how old was your baby when you changed exclusively to bottle-feeding?.....

3c At what age (weeks) did you / do you intend to start weaning your baby?___

3d Does your baby use a dummy? No ☐ Yes ☐ Occasionally ☐

3e Where does your baby sleep?
Moses basket/ cot ☐ Your bed ☐ Other ☐ Please state……..

3f If old enough, has your baby received his/her immunizations?

Not applicable (<2month old) ☐ Decided not to give ☐
Yes @ 2months ☐ Yes @ 3 months ☐ Yes @ 4 months ☐

3g Does /has your baby suffered from colic?

(Criteria= Started after 3 weeks of age/ lasts 3 hours a day/occurs 3 days a week)

No ☐ Yes ☐ Age of onset and ……. End…….

3h Apart from normal illnesses, has your baby suffered any health problems?

……..

3i. After the birth, has your baby ever been in hospital? No ☐ Yes ☐

If yes what was the reason…….Duration of stay?……

3j. Do you have any concerns about your baby's health / development?

Very concerned ☐ Slightly concerned ☐ No concern ☐

If yes how long have you had these concerns and what was the age of onset?
……
What is your main concern about your baby's health and development?
……..

3k. Have you ever received any home safety advice visits? No ☐ Yes ☐

3l. Have you attended any *baby* parenting courses?
*yes = ineligible for research!
No ☐ Yes ☐ If yes please give details including date……..

3m. Have you ever attended any parent and baby / toddler groups?

No ☐ Yes, with previous children ☐ Yes, with target child/baby ☐
If yes state *total hours attended* to date and distance in miles (*one way*) from your home to the group

Ti a fi/ playgroup	…..hours	Distance……
Language and Play	…..hours	Distance……
Breast feeding group	…..hours	Distance……
Baby massage	…..hours	Distance……
Post-natal mother and baby group.	…..hours	Distance……
Others (please state) _____	…..hours	Distance……

4. Your HEALTH

4a. <u>Since the birth of your child</u> have you suffered any significant health problems?
Yes ☐ No ☐
If yes, please explain……

4b. Have you felt low /helpless / depressed? No ☐ Yes ☐

Did you feel like this before your baby was born? No ☐ Yes ☐

4c Are you currently on any medication? Yes ☐ No ☐

If yes, are these related to: Mental health? ☐ Physical health? ☐

4d. Do you smoke? No ☐ Yes ☐

If yes, how many cigarettes do you smoke each day?
1-10 ☐ 10-20 ☐ 20+ ☐
4e Did you smoke during the pregnancy? No ☐ Yes ☐

5. FAMILY HEALTH
5a. Who else lives *in your house*? (include siblings ages and Dates of birth)
……
……

5b. Have any other household members had serious health problems?

No ☐ Yes ☐

If yes, please state……

5c. To your knowledge, has any member of your *immediate family* ever had problems/ involvement with:

Alcohol No ☐ Yes ☐ Drugs No ☐ Yes ☐

Criminal activity No ☐ Yes ☐

If yes to any of the above, what is the current situation?……

6. RELATIONSHIPS (if applicable)

6a Please indicate how much contact you have had with other adults in the last 7 days.

	Number of contacts	Overall Helpful Y/N
Family (not living in your house)		
Friends		
Others		

Have the last 7 days been typical? No ☐ Yes ☐

6b. Are you currently?

Single, never married ☐ Separated ☐ Divorced ☐

Widowed ☐ In a relationship, but living apart ☐

Married ☐ Living together ☐

6c. Parents of babies who's behaviour presents challenges such as sleeping or feeding difficulties sometimes claim that these problems have an effect on their adult relationship(s).

Do you feel that your baby's behaviour is having such an effect on your relationship with your partner?

No ☐ Yes ☐ If yes please explain……

6d. How would you rate the quality of your relationship with your partner?

Bad ☐ Good ☐ Mixed ☐

Poor ☐ Excellent ☐

6e. Spouse / partner's relationship to baby:

Biological parent ☐ Step-parent ☐

Foster parent ☐ Other adult relative ☐

Adoptive parent ☐ Parent's partner (living together) ☐

6f. How involved is your partner with the upbringing of your baby? (% time)

<10 % ☐ 10-40% ☐ 40-70% ☐ 70-100% ☐

6g. Would your partner be interested in joining the parent group? Yes ☐ No ☐

7. HOUSING

7a. How many times have you moved home in the last 5 years?

0 ☐ 1-2 ☐ 3-4 ☐ 5 /5+ ☐

7b. Are you a:

Social / council tenant	☐	Private Tenant	☐
Owned / with a mortgage	☐	Other	☐
Housing association tenant	☐	Please give details……	

7c. How many bedrooms do you have use of? ……

7d. Condition of the building

Please circle if you feel any of the following dangers or conditions apply to your home

Too cold	Security	Water supply	Fire hazards
Too hot	Dark	Sanitation	Electrical
Carbon monoxide gases	Poor food hygiene	Access problems	Dangerous stairs
Asbestos	Noisy	Damp	Structural
Danger/ hassle from other tenants or neighbours	Feel environment is unsuitable to bring up a young child	No outside garden / play area for young child	Difficulty getting buggy in & out of house
Over crowding	Pests	Uneven floor	Other…….

8. INCOME

8a. Is your income mostly made up of:	Mother	Father
i. State benefits	☐	☐
ii. (Job seeker's allowance / income support)		
iii. Benefits that subsidise wages (e.g. Tax Credit)	☐	☐
iv. Maintenance payments for baby/ children	☐	☐
v. Wages	☐	☐

How many <u>hours/ week</u> *did you work before giving birth* ……,

			Baby's father currently works …….
vi.	Other	☐	☐
vii.	to answer ☐		

8b Total family weekly income:

Which category would best describe your *total weekly income*?
What you get each week = employment, social security payments

EXCLUDING housing cost working tax and family credits, child maintenance, pensions or investments.)

Please place tick in the column that reflect the household you are in

One adult households		Two adult households	
£160 or below	☐	£245 or below	☐
£161 - £239	☐	£246 - £325	☐
£240 - £319	☐	£326 - £400	☐
£320 - £395	☐	£401 - £480	☐
£396 - £474	☐	£481 - £555	☐
£475 - £550	☐	£556 - £634	☐
£551 - £650	☐	£635 - £749	☐
£651 or above	☐	£750 or above	☐
Declined to answer	☐	Declined to answer	☐

Thank you very much for completing this questionnaire

APPENDIX P

Information sheet for parents to explain the recorded play measure

GUIDELINES FOR HOME OBSERVATION

During the observation visit, the researcher will firstly set up a video camera to record you and your baby for 10 minutes, the first five minutes will involve you holding your baby in your arms and interacting as normal and after this the researcher will give you a toy to play with your baby.

We understand that you might feel a bit uncomfortable to be observed, but it is best to try and interact with your baby as normally as possible, as if the observer wasn't there.

Here are some general guidelines to the observation visit, but please feel free to ask the researcher any questions you may have before the observation starts.

- No TV or radio on during the observation
- You should aim to stay within the view of the camera- sitting down with your baby on your knee
- No reading
- No visitors
- Answer incoming calls briefly, no outgoing calls / texts
- No talking to the researcher during the observation

THANK YOU VERY MUCH FOR YOUR COOPERATION

APPENDIX Q

PIPOc coding manual

Introduction

This Code has been developed to evaluate the interactions between parents and their infants in the first 18 months of life. This is a period of intense development for the infants and the relationship between the parent and infant can have significant long-term effects on the child's future development.

Rationale for developing the code

The Incredible Years (IY) Infant programme, developed by Prof. Carolyn Webster-Stratton (2008) encourages parents to stimulate their infants and understand their cues as they get to know each other in the first year. Literature in this area has shown than Parental Sensitivity and their responsiveness to their infants' cues in the first months of life can have long term effects on their child development. The categories included in this new Parent Infant Interaction Code develops existing observation codes published by Miens and Fernyhough, (2010), Leerkes, Nayena Blankson, and O'Brien, (2009), Mills and Puckering (2001).

This code assesses the parents' level of engagement with their infant and their interaction when observed over a 10-minute period. This code has been used in an evaluation of mother infant interaction with home visits conducted at baseline when infants were under 6 months of age and followed up 6 months later.

Due to the very young age of the infants at the first visit, it was felt that 10 minutes was the maximum possible period for parents to try and engage their infants in play. The observation structure and times were kept consistent over all the observations. Parents were asked to play with their infant without any toys for five minutes and to use toy provided by the researcher for the remaining five minutes. This minimises any variation introduced with the type of toy parents may have available in the home.

The play was video recorded for analysis away from the home. Recording the interactions enables researchers to code in detail and the facility to check back if available to ensure all interactions are accounted for. Coding from a recording also eliminates any external distractions that may occupy an observer coding interactions live in the home.

Scoring individual items

Parents were all given the same instruction to play for 5 minutes without toys and they would be given a toy after the first 5 minutes for playing with their infant for a further 5 minutes.

Each category will yield a total score for the 10 minutes play.

The Observer uses a partial interval scoring technique to score the observations with 10 second intervals, all the observed interactions /behaviours that occurred in the 10 seconds are coded once. Repeated behaviours in the same category seen within the 10 seconds will only be given ***one*** score per 10 seconds. If the same behaviour continues into the next 10 seconds this will be counted as a separate occurrence.

Some interactions such as parent verbalises and physically tickles their infant would be coded under touch, talk and play. A nursery rhyme like round and round the garden is scored as move, talk and play.

Scoring guide

1. If the recording is too dark or the parent is out of view place X in the 10 second section of the scoring sheet.
2. It is important that only the parent's direct actions with their infant are coded and not any others present in the room or reactions from the mother to the others in the room.
3. Practice by looking for each category separately before attempting to code all the behaviours simultaneously.
4. After each 10 second e.g. 10-20 s pause the DVD and go down the list noting which behaviours you have seen in that 10 second. Once you are familiar with the codes the coding can be done with an audible noise to signal every 10 second interval.
5. Always code all the different categories of behaviour observed in the 10 seconds.
6. Code from the infants perspective, if the infant cannot see their parents encouraging gestures they cannot score respond.
7. Each behaviour can only be coded once in each 10 second observation e.g. if the mother touches her child 3 times affectionate touch will only score once within that 10 second interval, if the mother was holding her child continuously for the observed 10 seconds again this will only be coded once within the 10 second period.

8. Only code the mothers behaviour towards the target child, do not code any behaviour related to others in the room- partner or other children.
9. If you are unsure note the time and make a comment in the notes section suggesting which category you feel most appropriate and why.
10. Take a short break between observations to remain alert to the behaviours in each observation.
11. Please refer to the coding sheet to familiarise yourself with the categories and their location on the sheet before coding.
12. The information entered into the first section must be complete for input and analysis of the data.
13. This is not designed to be an exhaustive code but related to the important factors according to the current literature the interactions. Some codes that were investigated and eliminated from the final code include Parent Ignore, Positive visual affect, parent introduce next activity, non-attuned parenting, inappropriate developmental task, no comment and no visual engagement with the child.
14. Each category of behaviour is described in detail with examples given for behaviours that qualify and those that do not fit the category criteria.

1. Touch

Definition

This is scored when the parent physically touches their infant briefly, for a period of time or holds the infant in a *warm affectionate manner*.

The parent may embrace her child with an open palm or demonstrations of affection such as a cuddle, kiss, gentle taps on the body, stroking the infant qualify as affectionate touch.

Examples

Adult cradles infant in their arms or places them on their shoulder using an open palm to hold their infant in close proximity to their body and a comforting manner.

The infant is stroked or touched gently.

Parent holds infant as she sings a nursery rhyme.

Rules: The following examples do not qualify as affectionate touch.

Do not code parents open palms on the infant to reposition, adjust or support infant's position.

Attempts to move the infant's position to encourage the infant to develop fine or gross motor skills should be coded as **move**.
Do not code if the parents is only partially holding the infant- resting on their arm or fingertips.
Holding the child on their lap or placing a hand to support the infant's head or torso, this is a basic safety requirement in the first months before the infant has greater control and strength in holding his/her head up.
Care taking activities such as winding the infant or touches that result from general activities such as removing their fist from their mouth should not be coded.
A touch that includes a vocal or visual chastise from the parent will not qualify for affectionate touch.
If the infant initiates contact or has involuntary movement that results in touching the parent such as holding on to the parents finger code this is coded as **Respond**.

2. Move

Definition

The parent encourages their infants' fine and gross motor movement, promoting the infants physical development and encouraging them to utilise their limbs. This can include supporting infants to extend limbs fully, muscle development or balance by standing or bouncing on parents lap. The parent may assist their infant to hold on and grasp a rattle and support their arm to shake the rattle. The parent may also change their infants position from lying to upright or held securely above the head to encourage the development of muscle tone.

Examples

Offer infant fingers to grasp
Ask infant to 'high five'
Bouncing on lap or lifting infant to sitting position (with appropriate support)
Peddling movement of the legs
Lifting infant above parent's head to give them a different perspective of space and encourage stability
Parent helps/encourages infant to clap hands, holding hand or gently moving infant's limbs or states
Give me your hand, come here.

Parent holds and moves infants arm stating say *heia/bye bye* (double coded with **talk)**
Place toy out of reach to encourage stretch or crawling
Parent helps infant stack blocks or shows how to successful manipulate a toy or object such as a peg.
Tapping the floor to encourage a crawling infant to play/ return to the adult.
Tapping furniture to encourage infant to mimic
Parent part opens a bag containing toys and encouraged their infant to open it.
Parent holds hands and helps infant to walk this may/ may not be accompanied by a verbal cue *ready steady go* (if so double code with **talk**).
Rattling a toy to encourage baby to turn head to look at the toy, arm movement or encouraging your infants top grasp toy or if the parent helps infant place ring on object this can also be double coded as **play** if parent plays an active role in the game.
Encourages infant to play round the garden on parents hands **(move and play).**
Parent asks infant *shall we do sit ups? Ready steady go* and supports infant to new position. **Talk and move.** *Well done* after this would also be coded as **response.**
Do you want **(mind)** *to play* **(play)** *row row your boat* **(move)?**
Rules
Do not code move if the infant initiates movement –this is **respond**. The parent must have encouraged or facilitated the infant to move to code as Move.
Do not code if the parent adjusts their infants position unless the parent actively encourages or facilitates their infants to utilise their limbs.

3. **Play**
Definition
Parent *proactively* initiates and sustains games with her infant with obvious positive affect in the parents attempts to *engage* their infants interest. Parents must show a desire to include their infant in the game and *mutual enjoyment* to qualify as play. The parent may be coded as play if they make encouraging sounds using a positive and warm tone.
Parents may engage their child with *wow what's this/ that/ what you got*?
Further encouraging remarks to sustain the play may involve *wow/that's it/look/yeh*!
Examples
Infant lies on floor and parent looks on and plays Peeka boo
Songs and nursery rhymes with actions

Teasing with dummy- *where's it gone*? before replacing it back in view
Chasing or hiding- *mummy's gona get ya* and potentially followed with a chase.
Parent tickles or 'blowing a raspberry' on the baby's skin.
The parent pulls out their tongue to encourage the infant to mimic in a proactive positive manner.
Parent holds a mirror for the infant and asks *can you see the baba*?
Pressing interactive sections of toys to encourage infant exploring.
Rolling balls to each other
Tickle games, incy wincy spider, this piggy went to market.
Infant holds toy and parent helps her move the toy repeating *shake shake* **(play and respond)**
Parent shows a toy and comments *wow look at the smiley face! Can you do that*? Helps infant to manipulate toy **(play),** *Clever girl* **(respond).**
Parent bounces infant on lap – *do you want to play pony rides?* **(mind, move and play)**
Stacking blocks. Parent suggests building a tower **(talk)** and gets the infant to knock it over **(play)** before re building the tower.
Look it makes a sound/noise **(Play and talk)**
Rule
If the parent is not engaged, facing away or not commenting do not code this as play.
Do not code encouragement verbalised to siblings.
Quiet, neutral parents do not qualify as play.
Neutral comments may be coded as **talk** if the parent labels objects in the infant's environment increasing their receptive vocabulary.
Repetitive use of a toy with no engagement or ignoring the infant's response does not qualify as play.

4. Talk

Definition
Any neutral or positive vocal cues *from the parent* that encourages their infants to *recognise sounds and label objects* in their environment.
The parent may use extended words repeated in high tone (parent-ease), naming objects or encourage their child's attempts to communicate verbally by repeating some sounds/ words.
Examples

The parent and child may be looking at pictures together and the parent points and names the object or its accompanying sound.

Say mam ma.

Taa to mummy -when asking infant to hand over object

What's this/ Who's that/ What you got? -followed by parent describing, naming or asking the infant to show her the named object.

Are you touching its eyes?

Parent my simply be encouraging their infant to make sounds- *say ahhh/ cwwww/gwww*

Saying the infants name to get their attention.

A B C, .. A B C / 1 2 3 .. 1 2 3

Dog barks- mum says '*wow wow'*. Frog character *rubit rubit'*

Mum encourages infant to comply e.g. claps hands and mum states *good girl/ boy*.

Both look at a picture and mother names objects/ people in the picture.

Looking in the mirror and parent says '*hello'*.

Touches or shakes toy, parent states *touch touch* or *shaky shakey.*

Activities that encourage Talk may be <u>double coded</u> as **talk and play** if the mother is attempting to engage her infant in the activity and also labels their activity - Mother dances and repeats *'dance dancy dancy dancy'* as she moves or Tickles her daughter and says *'tickle tickle tickle'* or Action songs labelling part of the body or actions e.g. *heads shoulder knees and toes/ row row row your boat*.

Encouraging infant to move may be double coded as **talk** and **move** when parent says come on then and open palms for infant to move towards parent.

Double coded with **affection with talk** when the mother kisses her baby whilst saying *kissy kissy.*

Ready steady , 1, 2, 3 or shall I put you on my shoulder? when she prepares the infant for a new activity or movement. Note if the mother would have asked do you prefer/ want to get up or move this should be coded as **talk +.**

Let's build a tower, wow, tower falls after infant pushes it down code **response/play and talk** if mother exclaims *oh dear/ oh no/ oh oh.*

<u>Rules</u>

A simple open ended *'what's this?'* to get the infants attention with no further elaboration should not be coded as **talk** but may be coded as **play** if accompanied by the mothers enthusiasm to engage with her child in play.

Any words that the parent says out of context or beyond the infants experience, do not relate to the current environment or activity will not be coded as talk.

5. **Mind**

Definition

This involves the parent describing their perception of their infant's feelings; verbalising the child's wants, emotions and helps them label, identify and understand their emotions. Talking about emotions that the infant (not the parent) is displaying and what the child may want, enabling the infant to develop of sense of self and understanding of their emerging emotions. This also indicates that the parent appreciates that their infant has valid emotions and feelings. The statements can include either "You" or "we".

Examples.

Infant cries and rubs eyes parent responds- *Are you getting tired?*

Infant laughs and parent comments *You are enjoying this aren't you.*

You want that one as well?

What do you want to play?

Just want a hug

Do you want to hold it (Toy)

What do you want to do now?

You don't want to play with this.

Infant craws, parent tries to encourage to walk and baby refuses parent comments *you do not want to do ya?*

I know, you are getting angry.

Infant kicks and parent comments *are you getting excited?*

Infant cries parent says *oh dear* (**empathy)** *Grumpy grumpy* (**mind)**

Rules

Do not code any emotions related to other children or the parent alone.

If parent makes a vague statement such as 'that better' or describes the target infants emotions to their sibling, the infant will not know what this refers to do not be code this as talk.

6. **Respond**

Definition

The mother responds in a neutral or positive manner to her c*hild's neutral or positive vocal or physical actions*. This implies that the adult recognizes that the infant as a separate individual who can have an effect on their environment.

The parent will refer to infants' actions usually starting with a *reference to what the infant has done*.

The parent may mimic their infant's expressions or respond verbally to sounds that their infant makes.

Encouraging comments or sounds conveyed in an enthusiastic, warm and pleasant tone of voice in response to the infants efforts or actions also qualify to respond.

Examples could be when the child is physically or verbally exploring and the adult facilitates the infant in their exploration.

Parents may also make a cognitive elaboration of the infants' focus of interest.

Examples

Are you talking, really…? , Are you looking at the light? What's through the window?"

Infant says *ow* when object falls and parent repeats this.

Are you dancing?

Infant puts hand on head and parent states *oh stress*

'You clever' as praise after copies parent shaking toy after encouragement.

'You've found it' if the infant has managed to get a toy.

Infant waves hand and parent comments *heia/ bye bye* double code with **move**

' No -Po Pos' to warn of danger when the crawling infant reaches for the electric wire.

Infant pulls tongue out and parent mimics if this develops into a playful game code as **play.**

Parent responds to infant's leg movement in a neutral/positive manner *are you kicking me?*

Infant looks away, parent responds *what are you looking at?*

Infant crawls away, parent responds *where are you going?*

Infant grasps parent and parent responds by offering finger to hold on.

Infant looks towards light/ window- *can you see the lights*?

Infant makes sounds and parent responds *are you telling me a story?*

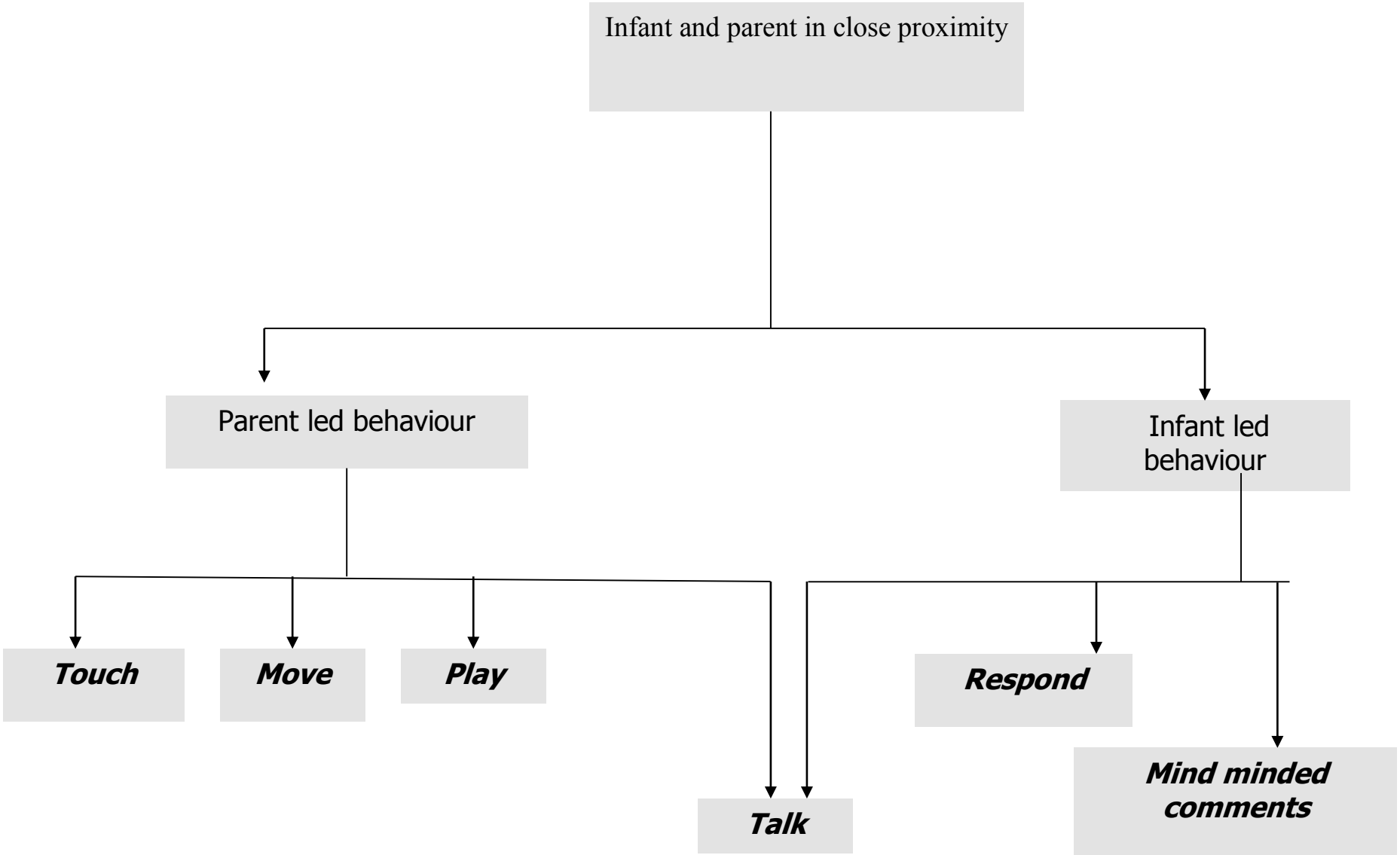
Infant not interested in toy- parent- *your not being entertained by that are you*? (If the parent used *'don't like this*' code as **mind)** Infant stands/sits up parent comments *look at the strong boy.*

Infant places toy on mouth and parent either helps to hold toy to soothe teething or says *don't put that in your mouth* and gently removes object, both comments would be **response**.
Double coding: **Play and respond**- Infant holds toy and mother helps him/ her shake the rattle and comments '*oh wow'.*
Rules: The response must be seen or heard by the infant to qualify. Comment must refer to something that the infant has done and not a negative comments eg your not going to tell me a story then? You being nosey/ Cheeky girl?

Acknowledgements

We would like to thank all the parents that agreed to be filmed during the development of this code. Advice and guidance from Dr Henningham and Prof Hutchings have been gratefully received. Finally I would like to thank Elin Williams, Ceri Evans and Laura Parry for the feedback provided during inter rater/blind coder training.

Flow chart of PIPOc target behaviours



Mother- Infant Behaviour Code front sheet

P number ……	BL/F1/F2		Comments		
Category	**0-30**	**0.31-5m**	**Total0-5**	**5.01-10**	**Total0-10**
TOUCH					
MOVE					
PLAY					
TALK					
MIND					
RESPOND					

	Initial	**Date**
Coder		
Total		
Total checked		

PIPOc- Coding sheets

No Toy	0-10	11-20	21-30	TOTAL 0-30	31-40	41-50	51-60
TOUCH							
MOVE							
PLAY							
TALK							
MIND							
RESPOND							

APPENDIX R

Karitane Parenting Confidence Scale (KPCS)

This scale has 15 items. Please tick the answer that comes closest to how you generally feel.

		No, hardly ever	**No, not very often**	**Yes, some of the time**	**Yes, most of the time**	**Not applicable**
1.	I am confident about feeding my baby					
2.	I can settle my baby					
3.	I am confident about helping my baby to establish a good sleep routine					
4.	I know what to do when my baby cries					
5.	I understand what my baby is trying to tell me					
6.	I can soothe my baby when he/she is distressed					
7.	I am confident about playing with my baby					
8.	If my baby has a cold or slight fever, I am confident about handling this					
9.	I feel sure that my partner will be there for me when I need support					
10.	I am confident that my baby is doing well					
11.	I can make decisions about the care of my baby					
12.	Being a mother/father is very stressful for me					
13.	I feel I am doing a good job as a mother/father					
14.	Other people think I am doing a good job as a mother/father					
15.	I feel sure that people will be there for me when I need support					

APPENDIX S

Warwick-Edinburgh Mental Well-being scale (WEMWBS)

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Below are some statements about feelings and thoughts.

Please tick the box that best describes your experience of each over the last 2 weeks

STATEMENTS	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	1	2	3	4	5
I've been feeling useful	1	2	3	4	5
I've been feeling relaxed	1	2	3	4	5
I've been feeling interested in other people	1	2	3	4	5
I've had energy to spare	1	2	3	4	5
I've been dealing with problems well	1	2	3	4	5
I've been thinking clearly	1	2	3	4	5
I've been feeling good about myself	1	2	3	4	5
I've been feeling close to other people	1	2	3	4	5
I've been feeling confident	1	2	3	4	5
I've been able to make up my own mind about things	1	2	3	4	5
I've been feeling loved	1	2	3	4	5
I've been interested in new things	1	2	3	4	5
I've been feeling cheerful	1	2	3	4	5

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

APPENDIX T

I-T HOME scoring sheets

Participant ID…….. Date……..

Baseline Infant /Toddler HOME record form

\+ *You agree with the statement — You disagree with the statement*

Obs= Need to be observed by researcher during home visit,
Ask= can ask the Parent present for answer, Obs ask = either

RESPONSIVITY Total=	**Obs**	**LEARNING MATERIALS Total=**	**Obs/ask**
Parent spontaneously vocalizes to child 2+		Muscle activity toys	
Parent responds verbally to child's vocalizations/verbalizations		Cuddly toy/ role play toys	
Parent tells child name of person/ object		Toys for literature and music present	
Parents speech is distinct, clear & audible (including parent-ese)		Mobile/ high chair/ play pen	
Parent initiates verbal exchange with visitor		Simple hand eye coordination toys	
Parent converses freely and easily		**ORGANIZATION Total=**	**Ask**
Spontaneous praise of child at **2+**		Child taken shopping at least once a week	
Parent voice conveys positive feelings towards child		Child gets out of house at least 4 times/ week	
Parent responds positively to praise of child by visitor		Taken regularly to doctor/ clinic	
ACCEPTANCE Total=		Special place for toys/ treasures	
Parent does not shout at child		**INVOLVEMENT Total=**	
No expression of overt annoyance/ hostility to child		Talks to child whilst doing housework	
No scolding/ criticism of child		Consciously encourages developmental advancement	
No **more than 3 interference**/ restriction of child		Invests maturing toys with value via personal attention	
ORGANIZATION		Structures play periods	
Play environment is safe		Provides toys that challenge child to develop skills	
INVOLVEMENT		**VARIETY Total=**	
Parent keeps child in vision/ looks at often		(Another adult) provides some daily care	
LEARNING MATERIALS		Visits/ visited by relatives at least 1/ month	
Toys provided for child during visit		Any Comments…	

APPENDIX U

Guidelines for Administrating the Expressed Emotion Speech Sample

PFMSS guidelines
Collection of PFMSS speech sample
GUIDELINES FOR ADMININSTERING THE PRE-SCHOOL FIVE-MINUTE SPEECH SAMPLE

Setting

In order to lessen interruptions when interviewing in a home setting, request that the phone be taken off the hook during the 5 minutes that the PFMSS is being administered. Minimizing distractions and interruptions will help to ensure consistency and accuracy of the data.

Equipment

Equipment quality is very important, particularly microphone quality. In addition, should a tape recorder with "voice activated" (VOR) mechanisms be used, the VOR should be disabled. The following equipment is necessary when administering the FMSS:

A good tape recorder
A high quality microphone
A stop-watch

Ensure that the video camera is also on to capture the parent's voice in case of problems with the recording.

Always test the equipment prior to administering the PFMSS. Batteries powering equipment should **always** be checked just prior to recording. It is important to remember when setting up for an interview to record at the beginning of the audiotape all identifying information (e.g., study name, ID number, family member, date, name of interviewer). *When administering the PFMSS, leave the tape recorder on while giving the verbatim instructions to the respondent.*

Time the FMSS using a stopwatch or digital watch for the most accurate results. Use of any timer with a bell is discouraged because it may startle the respondent. It is important that the respondent speak for 5 minutes. If the respondent is unable to continue for the full 5 minutes, even after the appropriate prompt has been given, then the tape machine **must continue** to record until the time has elapsed.

Verbatim Instruction

In order to ensure consistency in the data, when administering the PRE-SCHOOL Five-Minute Speech Sample the following instructions are to be read aloud **exactly as follows**:

EXAMINER: I'd like to hear your thoughts and feelings about (child's name), in your own words and without my interrupting with any questions or comments. When I ask you to begin I'd like you to speak for 5 minutes, telling me what kind of a person (child's name) is and how the two of you get along together. After you begin to speak, I prefer not to answer any questions until after the 5 minutes are over. Do you have any questions before we begin?

IMPORTANT: Once the respondent has begun to speak, the examiner may only make one comment after a 30 second interval.
"*Please tell me anything about (relative's name) for a few more minutes."*

APPENDIX V

Parents thank you letter- baseline

September/ November 2010.

Dear Parent

Please accept £10 a thank you from us for your time and effort in completing the questionnaires and observational measures for our research.

Your help with the research is invaluable, as without your kind cooperation, the study would not be possible. By conducting the research we hope that, in the future, more families will be able to access the Incredible Years Parenting Programme.

Should you have any queries in the meantime, please do not hesitate to contact us.

Yours sincerely

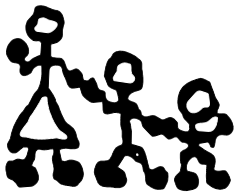
Catrin Hedd Jones

PhD student
School of Psychology
Bangor University

APPENDIX W

Baby certificate

PRIFYSGOL
BANGOR
UNIVERSITY



Tystysgrif / Certificate

AM / OF

GYFRANIAD / PARTICIPATION

.....

yn derbyn gradd Anrhydeddus fel Gwyddonydd bach mewn ymchwil gyda Phrifysgol Bangor.

is awarded our Baby Scientist award with Distinction, for research with Bangor University.

Llofnod / Signature: .....

Catrin H. Jones

APPENDIX X

Parent Group Participation Summary Sheet

Rhyleddol Cymru
Incredible Years Wales

Parent participation summary sheet

Group Location..... Leader names..... Parent name.....Start date of Group.....

Codes for completing the summary sheet

Attending the session				**Content/ Video/ Leader/ Discussion**	
Mother	M	**Attitude**		Not helpful	0
Father	F	Negative	0	Neutral	1
Other	O	Neutral	1	Helpful	2
Missing from group	X	Positive	2	Very helpful	3
Participation					
Seldom	0	**Homework**		**Make up session**	
Sometimes	1	Incomplete/ none	0	No	0
Frequent	2	Complete	1	Yes	1

Session	Attendance	Participation	Attitude	Homework	Content	Video	Leader	Discussion	M-up
1									
2									
3									
4									
5									
6									
7									
8									

APPENDIX Y

End of IYPB programme Evaluation

Parents end of programme questionnaire *(A range of possible answers were given after each question)*

Incredible Years Parent Program Satisfaction Questionnaire Babies Program

(Hand out at end of the program)

Participant's Name_____Date_____

The following questionnaire is part of our evaluation of the Incredible Years parenting program that you have received. It is important that you answer as honestly as possible. The information obtained will help us to evaluate and continually improve the program we offer. Your cooperation is greatly appreciated. All responses will be strictly confidential.

A. The Overall Program

Please circle the response that best expresses how you honestly feel at this point range of possible answers on each question.

1. The bonding that I feel with my baby since I took this program is
2. My baby's bonding with me since I started this program is
3. My feelings about my baby's social, emotional and physical developmental progress are that I am
4. To what degree has the Incredible Years parenting program helped with other personal or family problems not directly related to your baby (for example, your feelings of support in general)?
5. My expectation for good results from the Incredible Years baby program is
6. I feel that the approaches used to enhance my baby's development and language in this program are
7. Would you recommend the Incredible Years program to a friend or relative with a baby?
8. How confident are you in parenting your baby at this time?
9. How confident are you in your ability to provide physical, tactile and visual stimulation at this time?
10. My overall feeling about achieving my goals in this program for my baby are

B. Incredible Years Teaching Format/Methods

Usefulness

In this section, we would like you to indicate how useful each of the following types of methods used to deliver this program is for you *now*. Please circle the response that most clearly describes your opinion.

1. Content of information presented was
2. Demonstration of parenting skills through the use of video vignettes was
3. Group discussion, sharing and support from other parents during this program was
4. Use of practice with my baby during group sessions was
5. I found the "buddy calls" to be
6. The "baby-proof safety checklist" and "things I can do" journal was
7. Practicing things I learned at home with my baby was

8. Weekly handouts (e.g., refrigerator notes) were

9. Phone calls from the group leaders were

C. Specific Parenting Techniques/Topics

Usefulness

In this section, we would like you to indicate how useful each of the following topics and techniques is in improving your interactions with your baby. Please circle the response that most accurately describes the usefulness of the content or techniques.

1. Information about baby's development and developmental milestones

2. Providing Physical, Tactile and Visual Stimulation (e.g., baby massage, games, exercises)

3. Promoting Baby Language and Brain Development (e.g., speaking "parent-ese")

4. Child-Directed Play Interactions (e.g., reading babies' cues)

5. Descriptive Commenting/Social and Emotion Coaching

6. Helping Babies Feel Loved, Safe and Secure

7. Singing to Babies

8. Flexibility in Routines and Transition to Predictable Daily Schedules

9.Gaining Support and Importance of Parental Self-Care

10. Knowing How to Respond to a Baby's Crying & Strategies for Staying Calm

11. Introducing Books to Babies

12.Assuring a Baby-proofed Home

13. This Overall Group of Techniques

D. Evaluation of Incredible Years Parent Group Leader(s)

In this section we would like you to express your opinions about your group leader(s). Please circle the response to each question that best describes how you feel.

Group Leader #1_____(name)

1. I feel that the group leader's teaching and facilitation of group discussions was

2. The group leader's preparation was

3. Concerning the group leader's interest and concern in me and my baby, I was

4. At this point, I feel that the group leader in the program was

If more than one group leader was involved in your program, please fill in the following. (Go to Section E if only one leader was involved.)

Group Leader #2_____(name)

1. I feel that the group leader's teaching and facilitation of group discussion was

2. The group leader's preparation was

3. Concerning the group leader's interest and concern in me and my baby, I was

4. At this point, I feel that the group leader in the program was

APPENDIX Z

End of IYPB programme Parent Feedback

Parents overall evaluation at the end of the IYPB programme

What part of the programme was most helpful to you?

Group 1
Making me realize my daughters developments after discussions in group. I was really really sad when it ended and we still keep in touch as parents from the group 9
It was all helpful. It's nice to greet other mums from the group in town and check how each other is getting on after the group ended -11
The social aspect, sharing concerns, the opportunity to ask about issues. Really sad when it finished13
It was the highlight of my week22
Group 2
None- 2
Group discussions with the other mums 3
When everyone in the group gave their experiences and it was helpful to learn off4
Having support and new ideas5
Group discussions 7
Meeting other mums and getting advice and ideas from them. Picking up ideas to try with my daughter. Consolidating and approving things we were already doing Thank you for a fab course. Really enjoyed it and so has my daughter. It has really made a difference to my confidence as a mum and also my daughter's development. Keep doing the good work. 8
Group 3
Information on how things have changed over the years33
Everything was helpful44
Meeting other parents with children at a similar age30
Thank you for making me feel that I can talk about my personal problems and someone to listen to me and try and help me as much as possible. I've enjoyed every session52
Group 4
Group discussions having something in common with other mums24
Talking about weaning 26
Group 6
Everything 60
Talking to other mums64
Group 7
The group discussions getting advice36
Most helpful was about child play, routines and weaning as my daughter was at these stages37
Talking to other parents- good discussions, learning new ways to communicate, learning new skills to deal with different situations57
Help with weaning and stimulation of babies 66
Group 8
Learning the development stages for my son and seeing him develop each week(43)
The part about play(47)
Learning different ways to cope with crying(49)
Other peoples different opinions about different things to try with your baby 48
Group discussion 50
I found each stage very helpful- the development stages of physical/tactile was very helpful as I had forgotten when these were 51
I found all the programme helpful to me55
Group 9

Tactile stimulation 72
Meeting new mums and socializing. Having space to interative74

What did you like most about the programme?
Group 1
Liked meeting other parents 9
Learning to interact more with your child-11
Nice open atmosphere, helpful discussions-13
I wasn't being judged. It was nice to come here and just talk about my worries. It's nice to have a moan now and again22
Group 2
Getting to talk to other people 2
Everything 3
Meet the same people every week and sharing our experiences through the week 4
Having other mums to relate to and sicuss5
Being able to gain experiences from the tutors and other mums 7
Caring nature of Group leaders. My own health visitor can sometimes make me feel like I'm not a brilliant mum and doesn't seem to have much time for us. The leaders were genuinely concerned and interested in both me and my daughter. Made me feel confident that my motherly instincts are right. Meeting with other mums and sharing with them. Trying out new things with my daughter. Seeing positive changes in her development. Trying out new things with my daughter. Felt greatly supported 8
Group 3
Everything33
Group leaders and discussions 44
Meeting new people, seeing other babies learn things, leaders opening my eyes to new things about our babies30
All the help from the group leaders52
Group 4
Different topics of conversation, Play area for my baby. 24
My son was able to meet other babies26
Group 6
Group discussions and letting the babies bond together60
Meeting new people64
Group 7
Sharing experiences with other mother, could see that the babies were developing normally, advice on weaning and other things, great for the babies to socialize with other babies36
The group discussions as it's always good to hear about the other people's problems and solutions and my daughter enjoyed being around others37
That I was able to take part when my baby was only 11 weeks old- so I could learn right from the start, informal and friendly group57
Talking and sharing experiences with other mums and to have quality time with my son and doing the baby journal 66
Group 8
Group discussions / ideas
All of it, there wasn't a particular part 43
Meeting other mothers learning new things 47
Talking to mums about my baby's development and listening about other mums babies also the home made food-48
Learning from other parents experience-50

The group –fun, stimulated to think/focus, enjoyed the positive attitude of the leaders51
Meeting up every week and learning new skills and how to help my baby develop55
Group 9
To see other people and babies 71
Group discussions and meeting other mums 72
It was a good laugh good people and it helps me to know I was doing the right thing with my daughter. I have really enjoyed the course and love the people in it. It's been really really really good and has done a lot for me and my daughters relationship y other daughter loves it too- playing in the park and with the other kids 74

What did you like least about the programme?
Group 1
Nothing-11
Forms13
Filling forms 223
Group2
Most of the things felt unrealistic and hard to do when you are a mum of 42
Nothing3
Nothing- 4
Felt a bit American based. Maybe if videos were British based could relate to them more. I'm not sure how much of the course is common sense based and are things I would have been doing with my daughter regardless of the course7
Group 3
nothing44
N/a I enjoyed every part52
Group 4
vingettes24
the videos did not help me much26
Group 6
only once a week64
Group 7
Videos were old and American- so did not know what they meant sometimes e.g. carriage ride36
I enjoyed everything about the programme37
The videos but they did trigger conversation57
The videos dated and American 66
Group 8
Nothing 43
There wasn't anything that I disliked 47
Nothing I found it all helpful 49
Nothing I really enjoyed every bit of it 48
None-51
Group 9
The walk to the group74

How could the programme have been improved to help you more?
Group 1
I really enjoyed it its fine the way it is-11
More comfortable chairs-13

Group2
By having a mother with more children showing how to share your time 2
helped me a lot so can't think of any improvement3
I needed ways to learn how to calm my baby down he was a very whingey baby but now he's a lot calmer4
At the start I was confused on what we were setting out to achieve on the course, but as the weeks went on I understood the goals. Maybe a couple of weeks beforehand of just meeting with the leaders and the other mums to get to know each other better and I believe the output from sessions 1 and 2 would have been better 7
Group 3
n/a-44
Could last longer than 2 hours if possible52
Group 4
If I had started the course earlier24
If my son was younger I would have learnt more so I think the babies should be younger26
Group 6
More than one session a week and more than just 8 sessions64
Group 7
more updated videos36
I feel that the leaders did everything to make us feel wellcome37
The group has helped me a lot and grateful that I had the opportunity to come on this course66
Group 8-
Nothing gave me all the information I needed to see my son develop-43
Don't think it could be improved 47
Would be nice to meet up again to see how all the babies are developing 49
Through my own disorganization I sometimes got the homework notes mixed up it would help to have these numbered 51
Group 9
Go on for more weeks 72
Don't think it could from my point of view7

APPENDIX AA

Group Leaders Cost Diary

IY Group Session Cost Form

Name of Group Leader ……..

Start date of 8-week group …….

Pre-group set up costs	
Initial home visit to families: Include number of families and time spent (hours)	
Travel to initial visits: Include time/mileage	
Initial telephone call time: Hours/mins	
Admin time: Sending out initial letters etc.	
Pre-group supervision time (including set up day)	
Travel to pre-group supervision: Time/mileage	

WEEK:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Room preparation time								
Session preparation time (include personal time & planning with co-leaders)								
Group time (e.g. 2 hours)								
Catch up/home visits sessions (include number of visits & time taken)								
Weekly telephone time (parent/buddy calls etc.)								
Travel to home visits sessions: (time/mileage)								
Weekly supervision time								
Travel to weekly supervision (time/mileage)								
Other extra time commitments (details please)								
Other costs incurred (if not known please refer to centre manager): Provision of crèche facilities Taxis Rental of halls Food + Catering Admin costs directly related to the project (please specify in each case)								
Other costs or comments:								